The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 144, No. 5 — CHICAGO, ILLINOIS — SEPTEMBER 30, 1950

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THE PRESS AND THE PATIENT

Chairman's Address

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Medicine is a vast and fertile field for news. It holds a leading rank in reader interest, its chief competitors being sex and crime. This is only what one should expect, as matters of health and sex appeal instinctively to all human beings. As a result, what with the newspapers, the radio and television and, alas, the medical advertisements, the public is beseiged by a mass of medical information, the evaluation and presentation of which calls for a broad and careful analysis.

The reporting of medical news, in general, is of a high order. Credit for this may be given to a number of eminent, experienced science writers in the newspaper and magazine fields. These men and women are an honor to their profession and deserve the utmost cooperation of members of the medical profession in providing suitable medical news to the public. They are not to be confused with the writer, perhaps a recent graduate of a school of journalism, who goes in for freelance writing and frequently contributes news more for its sensationalism than for its scientific value. The ethical science writer has no desire to report medical news that may later prove a boomerang. He judges the value of news by considering its source, and through long experience he learns to recognize reliable sources; for those who may be interested, he also learns to sense the publicity seeker, whether an individual or an institution. The National Association of Science Writers is to be lauded for its commendable efforts in promoting the reporting and writing of medical science news. Each member of this association is proud of his reputation and endeavors to enhance it in the eyes of the medical profession.

THE NATURE OF MEDICAL NEWS

The leading question to which one must address himself concerning this whole matter is, what constitutes medical news. The reporter's response at once is—everything. With this one cannot entirely agree. According to the dictionary, news is "new knowledge of something significant"; significant means "suggestive of something more than what appears." Certainly in matters affecting public health a rigid adherence to these definitions should be observed.

It is important and quite proper that a physician report to his colleagues by appropriate means, either through professional journals or at medical meetings, that some new treatment or means of diagnosis has appeared to be successful in his hands and merits further investigation—this makes for progress. In time, other physicians may prove that the new treatment has merit or they may discover that it may be harmful or even endanger life. One wonders, in such circumstances, what is gained by informing the public of the original observations that later cannot be confirmed. Such is not legitimate, trustworthy news. Disillusionment follows in its wake, with the result that the premature publicity provides nothing but disappointment to, and a loss of confidence by, the anxious reader.

Whether the report concerns ulcer of the stomach, cancer, colitis, high blood pressure, tuberculosis, arthritis, anemia or heart trouble, to mention only a few of the diseases that receive great publicity, it would seem fairer to patients and their families not to raise their hopes or arouse their anxieties by the untimely publication of initial experiments that physicians and other scientists are conducting. Much of the effort of these investigators will be in vain—a disappointment to themselves as well as to others. Some of it will lead to the discovery of amazing drugs and astonishing operations. This will provide exciting news. Therefore until scientific studies have been properly evaluated by the investigators and their colleagues I believe that more will be gained than lost if they, as well as the press, curb their desire to rush into print.

Timing is the bête noire of the journalist. The newspaper reporter and editor must meet a deadline of hours and even minutes. They must also meet severe competition. This is particularly true of hospital news, especially when prominent persons are concerned, and accident and police cases; these present problems of their own which cannot be discussed at this time. The magazine writer, on the other hand, has more time to assemble and prepare his data. In regard to the matter of timing I would like to quote Steven M. Spencer, associate editor of the *Saturday Evening Post*, who says, "It is the science writer's contention that the public should learn of new developments touching its health just as soon as a number of qualified physicians feel that the development has promise and that it has been tried out sufficiently to justify continued use." With this statement I am sure that most of the medical profession would agree. It superbly answers the question of what to print and when to print it. It effectively eliminates quibbling over what is proved or unproved, premature or timely. If the press would accept Spencer's contention, there would be no need for haste in announcing that a physician has treated a few patients with peptic ulcer with a new drug and believes he might have a cure for the condition, that another physician has found a means of relieving a few cases of

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 28, 1950.

alcoholism and implies that further study may prove promising, that hormones exert benefit in leukemia, heart disease and a number of other disorders or that operations on the brain may become the answer to behavior disorders as well as ulcers of the digestive tract. It is unfortunate that releases of this sort are given out by universities, hospitals and clinics as well as by individual physicians. Even when the news article carries the qualifications, as it does at times, that the remedy reported "holds promise," "looks promising" or is entitled to "further investigation," and especially when the copy reader who writes the headline gives his version of the subject, which is designed to attract attention, the implication is that a cure is on the way. Some day the anticipated cure may materialize, but in the meantime a multitude of persons have become victims of a number of imaginary ills. The experienced physician harbors strong skepticism concerning such sanguine predictions; in his wisdom he knows they will not be fulfilled. He recognizes early enthusiasms reminiscent of those of Mr. Lacouppey as recited in the *Boston Medical and Surgical Journal*, Oct. 24, 1849:

> Mr. Lacouppey states that, as yet, theraputics do not teach how to arrest the progress of pulmonary tubercularization; he thinks that he has supplied the desideratum. He has administered, in a multitude of cases, the pharmaceutical preparation pommade mercurielle (mercurial ointment), in pills, a dose from five to forty centigrammes daily, half in the morning, half in the evening. Under this treatment the morbid phenomena soon lessened, and then ceased altogether.

EFFECT OF PUBLICITY ON USE OF DRUGS

Extravagant and undiscriminating publicity of proved valuable remedies gives one something to think about. According to the United States Department of Commerce figures, for instance, the domestic production of penicillin increased from 21.192 billions of units in 1943 to 133,229.493 billions in 1949 (chart 1). The domestic production of streptomycin increased from 1,174,582 Gm. in 1946 to 83,699,137 Gm. in 1949 (chart 2). The phenomenal increase in the use of

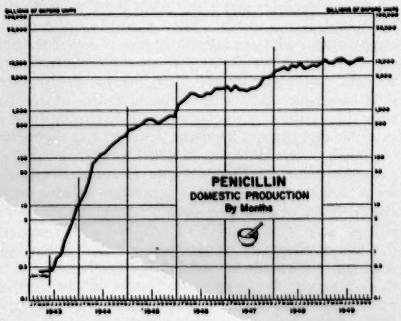

Chart 1.—Domestic production of penicillin by months. (Data for this chart and for chart 2 prepared by the United States Department of Commerce, Office of Domestic Commerce.)

these drugs is out of all proportion to the known indications for their use. This can be attributed to the fact that the public has had its curiosity so unduly aroused that it expects these drugs to be prescribed for conditions in which they can serve no useful purpose. The use of penicillin, it appears, has become almost routine for any manner of illness or injury. It would be a bit presumptuous for the newspapers to claim any credit for the increasing legitimate use of penicillin, as I heard a science writer do; much of its indiscriminate use, however, may be attributed to them.

The public and even some physicians overlook the fact that many diseases are self limited and that others

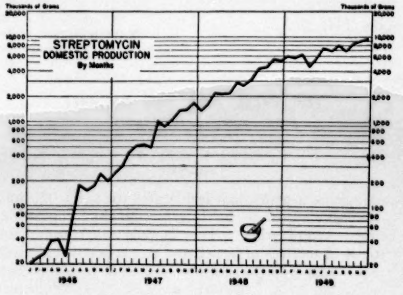

Chart 2.—Domestic production of streptomycin by months.

run a natural course punctuated by relapses and remissions. Because of these disease characteristics, certain drugs have been exploited as having value when, as a matter of fact, they are enjoying the credit for a spontaneous cure or for a remission with which they had nothing whatever to do. Witness the hysterical use of the antihistamine drugs for the common cold. The height of absurdity was reached when the name of one of these widely advertised drugs appeared in a newspaper advertisement of a mercantile store stating that the drug had been made available to the employees of the store and it was hoped as a result that their health and the safety of the customers might thereby be better assured. The tremendous publicity being given pituitary adrenocorticotropic hormone (ACTH) in the treatment of arthritis has its unfortunate aspects. Here is a drug that has been shown to be of inestimable value in the treatment of arthritis. It still is unavailable to the multitude of arthritics who have been told what it can do for them. The creation of a demand for a remedy for such an unfortunate illness before the remedy can be commercially available is not to be condoned. Among other harmful consequences, demands of such character create black markets with all their attendant evils and in general conspire in causing tremendous disappointment and suffering to many with pain-wracked bodies.

PUBLICITY AND RESEARCH

One cannot help but detect at times an undignified eagerness for publicity on the part of institutions as well as individuals, that permits their appearance in the press on matters not commensurate with their standing. Regardless of their reasons, it would do no harm for them to consider whether they are pursuing the path that is purely ethical and that leads to sound public relations. In the Principles of Medical Ethics of the American Medical Association (chapter 1, sec. 4) there appears this statement:

> Among unethical practices are included the not always obvious devices of furnishing or inspiring newspaper or magazine comments concerning cases in which the physician or group or institution has been, or is, concerned. Self laudations defy the traditions and lower the moral standard of the medical profession; they are an infraction of good taste and are disapproved.

If the present trend of newspaper and magazine publicity continues, it will become necessary either to rewrite this section or to appeal for a stricter observance of it. I hope for the latter. This brings up the matter of responsibility in the release of medical news.

One who has had considerable experience in research is slow to publish the results of his work. The true scientist demands absolutely accurate and well controlled experiments on a reasonably large scale and over a long period of time before he draws any conclusions. The enthusiast, while honest, is apt to be impatient and jump to conclusions, and it is from him that much unsound medical news emanates. He finds opportunity to perform his experiments in the rapidly expanding field of research. The public and the medical profession owe a great debt of gratitude to the pharmaceutical houses of the country which contribute annually, I am told, $25,000,000 for medical research. The federal government has likewise provided enormous funds for research. It might be well, however, to consider to what extent universities and hospitals should continue to accept government funds with the possible future obligation they may entail. There is need for more and more research, but there is greater need for more suitable selection of those qualified for research and for better controlled research—especially before its results are made public. The medical profession should look to its laurels in this respect, as it enjoys no immunity to the menacing cloud of mediocrity that is settling over this country. He who undertakes research in a special field will be the better equipped for his work, the more general training he has had. This is especially true of the physician, whether he be engaged in experimental or clinical medicine. I am convinced that a physician should not specialize in any field of medicine until he has had at least three years of training in all fields, namely, general practice. Institutional myopia is a malady that is difficult to overcome; it is the result of too much technic and too little philosophy in this science-ridden world. Incidentally, a requirement of general practice would help solve the program of physician shortage in many communities; at the same time it would make a better man and an abler physician of the person who learns a little of the country and its medical problems—and its rewards. I digress in this fashion only to illustrate one of the means of training physicians to better evaluate the work they are doing for publication.

INFORMATION ON SIGNIFICANT MEDICAL ACTIVITIES

It is important that information regarding significant medical activities be released to the press, whether they are taking place in a local community or on a national scale. One could think of an endless number of stories of medicine full of wonder and amazement and crammed with reader interest that could be told the public—stories based on what has been accomplished in the field of medicine and surgery—not in a fragmentary way, but in a great and thrilling manner. For current interest, let readers be told of the constant new developments touching their health "just as soon as a number of qualified physicians feel that the development has promise and that it has been tried out sufficiently to justify continued use"—but no sooner. Let them be told the story of the birth of the babe as nature meant it to be and the story of the return of the infant to its mother's breast. These are medical "advances" that are fundamental in the creation and development of a sound and stable human being who is emotionally and physically better fitted to face the future. For scientific and technical interest let them be told of such activities as that of the American Gastroenterological Association, which will soon publish the results of a national survey conducted by a committee of highly qualified specialists of that widely exploited operation for peptic ulcer—vagotomy. This will be medical news. Scientific bodies in other specialties will also have similar trustworthy news for the insatiable appetite of the science writer. News of such character will keep the public abreast of what is going on in medical affairs. This is of concern when it comes to the matter of research funds and appropriations. It promotes the public's interest in health matters and lets them know how their money is being used and with what results; it demonstrates to them the remarkable accomplishments in the field of medicine that are permitted under a system of free enterprise and opportunity; it provides them with an increasing sense of security concerning their health; it promotes better public relations with the medical profession and better personal relations with their physician.

I would suggest a number of ways to secure the release of the right kind of medical news at the right time. First, the medical profession, within the limits of propriety, should whole-heartedly cooperate with the press. In so doing it will afford opportunity for the press as well as the profession itself to better serve the public. Many national medical organizations, medical institutions and state medical societies have public relations committees or individuals that serve as a liaison with the press. To get the best results at medical meetings these committees or individuals should be experienced in the selection of releases for the press and should always be available to consult with the reporters. Physicians in many instances either are not experienced in public relations work or are not accessible to the reporter. A medical institution should employ a fully competent public relations director to handle its publicity. By so doing it would prevent the publication of misquoted and inaccurate information that is likely to result from personal interviews or from leaving the interpretation of a medical release entirely to the reporter. The physician will of course be treading on safer ground, all things considered, if he grants no interviews that are not consistent with the policy of the institution in which he works or with the society of which he is a member. There are many physicians who command one's admiration because they look with disfavor on the appearance of their names or their works, and especially of their photographs, in the public press. However, too extreme an attitude of this sort disheartens the reporter, who realizes that his article will lack color and interest if it is devoid of personal features. Today, the physician may feel safe in the confidence of the reporter and can feel assured that interviews and releases will be reported accurately; also, that care will be taken to include reference to any qualifications or limitations he has expressed concerning his investigations. He should appreciate, however, that his story must be presented in a manner that will arouse the curiosity and hold the interest of the reader. Facility in doing this is a measure of an editor's ability. Physicians should also remember that newspaper reporters and science writers have a flair for dramatizing and

glamorizing the news. Some possess the flair more than others; all the good writers have some of it, or they wouldn't be good.

Among the many herculean tasks which the American Medical Association performs so creditably, it maintains a Press Relations Division whose function is to work with the newspapers and magazines throughout the country. This division cooperates closely with all the committees, councils, bureaus and officers of the Association in the dissemination of medical information to the public. The Association also maintains a Bureau of Investigation which is purely educational in character "and has, for its primary object, the collection and dissemination of information on patent medicines, quacks, medical fads and various other phases of pseudomedicine." Finally, in connection with the subject under discussion, the Councils on Pharmacy and Chemistry, Physical Medicine and Rehabilitation, and Foods and Nutrition are all ready at all times to serve the press and the medical profession. Press associations, newspapers and news magazines rely on the scientific information secured from the Association and accept it as "newsworthy and reliable." Here, then, is an authoritative source of information on all medical matters that is available to physicians and newsmen in their preparation and publication of medical news.

MEDICAL ADVERTISEMENTS

I would now like to discuss briefly the matter of medical advertisements. It is not a pretty picture. The Principles of Medical Ethics is a "guide to correct conduct" which is honored at large by the members of the medical profession. If this were not so, the newspapers and magazines would have little medical news that they would care to publish. In providing only ethical news to the press and observing correct conduct on their own part, physicians have a right to expect in return correct conduct on the part of the press. This the newspapers do not exhibit in the general run of medical advertisements that they publish. These advertisements are frequently of the testimonial type; testimonials have been called "the sheet anchor of medical advertising." Samuel Hopkins Adams once said of them in the *New York Tribune*, "Because of their supposed appeal to experience, their commercial value is large; because the testimony of those who give them is not competent, their scientific value is nil." Apropos of their worth is the quotation from the *Toronto Star*, "If your brains won't get you into the papers, sign a patent medicine testimonial. Maybe your kidneys will." Among other pernicious influences testimonials may activate a psychotic type of religious fervor which can find its way into otherwise intelligent groups. Most medical advertisements carry claims that the remedy advertised will relieve anyone of a number of complaints. At times, the remedy will give temporary relief and thereby lull the patient into a false sense of security. This is particularly true of remedies advertised for ulcer of the stomach, gas pains, indigestion, colitis, constipation and many other conditions, any one of which may be the first warning that cancer or some other organic disease is developing. If there is one thing the medical profession emphasizes above all others in its effort to control cancer, it is early diagnosis. Early diagnosis necessarily depends on seeing the patient as soon as possible after symptoms develop, no matter how benign they may appear to be. By encouraging self medication the medical advertisement may cause the sufferer to postpone a proper investigation of his illness, with the result that he becomes another incurable victim of cancer. Some newspapers will editorially condemn as cruel the publication of premature releases on possible cures for cancer and yet, apparently with a clear conscience, carry advertising that can be the means of leading a victim blindfolded into its very clutches. This is not only unethical, it is evil. For the papers that do this the suggestion for correct conduct would be either to carry no medical advertisements or to submit them for approval to an experienced physician or a committee on public relations of the local county medical society. It would be difficult to imagine the amount of serious, if not incurable illness, that would be prevented if newspapers and the radio would cooperate in this way with the medical profession.

The radio and television have become of incalculable influence, and it may be predicted that more and more this influence will be exercised in matters of health. Most of what has been said concerning the press may be applied to these agencies; in fact, added emphasis may be given to what I have said about advertising because of the unique opportunity afforded them of disseminating dependable and useful medical information.

CONCLUSION

I have merely touched on the relation of the press and the patient, a matter fundamentally affecting the health of the American people. It presents many difficult and controversial aspects. I trust that my discussion may be the means of promoting further cooperation between the medical profession and the press, with the result that the welfare of the patient will be promoted and the health and happiness of the nation further assured.

1901 Walnut Street (3).

An Atmosphere in Which Dr. Welch Was Popsy.—We are met today to talk about Dr. William H. Welch and his influence. We are talking about not Dr. Welch alone but the quality of interchange among a relatively small number of first-rate human beings—an atmosphere in which Dr. Welch was Popsy—a relationship whose larval form was eager work and whose imago I have tried to name as the heritage of excellence. It does not depend on numbers; it depends on the quality of the participants in the life of the university. Subjects may come and subjects may be removed from the curriculum; professors may turn out to have been egregiously mistaken, but if they were first-raters and in eagerly honest relationships with each other whether at work or at play, the result is the heritage of excellence.

In this sense Johns Hopkins is enviably rich. The legend, the heritage of excellence that came from the unflagging interchange between Welch and Osler and Halsted and Abel and Howell and Mall and a few others—in this you have what makes a generous fellowship a safe investment here at Hopkins, safer than in a university that has never witnessed the contagious companionship of excellence. What more do men of superior character and capacity require for their association than freedom, responsibility and expectation? The wisdom of the university is to provide those three—freedom, responsibility and expectation. It is the interaction of such men that attracts great young men, leads to great living and itself lives on long afterwards as a heritage of excellence ready at any time to burst into bloom again.—Alan Gregg, Dr. Welch's Influence on Medical Education, Supplement to *Bulletin of the Johns Hopkins Hospital*, August 1950.

MANAGEMENT OF RHEUMATOID ARTHRITIS WITH SMALLER (MAINTENANCE) DOSES OF CORTISONE ACETATE

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Since Hench, Kendall, Slocumb and Polley[1] first reported that the adrenal cortex hormone, cortisone, exerts strikingly beneficial effects on rheumatoid arthritis, several other investigators have confirmed their observations.[2] The hormone produces prompt and definite suppression of the disease, but its action is usually temporary and relapse ensues when administration is stopped. Cortisone therapy, therefore, is not curative, and it appears that improvement is maintained only by continued administration. Furthermore, adverse side effects may attend its use because the hormone influences a wide variety of metabolic functions. Hence, if cortisone is to become a therapeutic agent, methods for prolonged administration must be devised which will avoid or minimize the unfavorable reactions and yet preserve its effectiveness.

USUAL PATTERN OF CLINICAL IMPROVEMENT: REPORTED EXPERIENCES

When adequate doses of cortisone are given to patients with rheumatoid arthritis, a fairly uniform pattern of improvement results.[3] Within a few days (or hours in some cases) there is a dramatic reduction in stiffness of muscles and joints, lessening of articular aching, tenderness and pain on motion and significant increase in articular and muscular function. Usually the first symptoms to subside are muscular and articular stiffness and rest pain, and within one to four days the patients may have no further need for acetylsalicylic acid or other analgesics. Next in order of improvement is lessening of joint pain on motion, increased motion and decreased tenderness of the joints. Reductions in articular swellings are usually slower in occurring and may not be complete, but sometimes swellings and effusions recede rapidly and completely. Within seven to 10 days mild flexion deformities may be corrected. In spite of advanced muscle atrophy and previously restricted joint motion, muscle strength and joint function may return to a remarkable degree within a few days. In early and less severe cases, complete remissions may ensue with disappearance of all abnormal physical signs. In severe cases and in cases of longer standing, some articular swelling, tenderness and pain on forced motion may persist even when large doses of the hormone are given for protracted periods. Destruction in cartilage and bone, fixed deformities and ligamentous calcifications are not changed. Nonarticular features, such as subcutaneous nodules, enlarged lymph nodes, bursitis and tenovaginitis, improve or disappear along with the improvement in the joints. Constitutional symptoms which accompany the disease subside rapidly. A sense of well-being is produced and "toxic feelings" are lost; general strength and endurance are increased; fever, if present, subsides; appetites quicken, and there are corresponding increases in food consumption, general nutrition and body weight. Erythrocyte sedimentation rates are reduced, anemia is corrected and the plasma proteins, if abnormal, revert to normal. Articular biopsies, performed after several weeks of cortisone administration, show definite reductions of synovial inflammation, though complete healing has not been observed.

REPORTED EFFECTS OF CORTISONE WITHDRAWAL

When cortisone administration is stopped, relapse of disease activity results in 80 to 90 per cent of patients.[3c] Generally the rheumatic manifestations begin to return promptly, often within two to seven days, and within three to four weeks the symptoms and signs have usually reverted to their original intensities. In some patients the rheumatic activity returns more slowly, and an occasional patient may experience a secondary and sustained remission following an initial short relapse.

Adverse Effects.—Undesirable metabolic and clinical signs of cortisone excess develop in a relatively high percentage of cases during the administration of large doses of the hormone. Of 23 patients studied by Hench, Kendall, Slocumb and Polley,[3c] most of whom received large daily doses of cortisone or pituitary adrenocorticotropic hormone (ACTH) for long periods, adverse side effects (often mild) were noted in 14 (61 per cent). The untoward reactions were reversible and disappeared when cortisone was discontinued. Signs of hypercortisonism have been reported in varying combinations[4]: (1) sodium retention and altered fluid balance as evidenced by edema, sudden gains in weight, polydipsia and oliguria, (2) abnormal deposition of adipose tissue of the face (mooning or rounding of facial contour), posterior part of the neck or buttocks, (3) acne and mild hypertrichosis (apparently indicating increased androgen activity), (4) changes in libido, potentia and menstruation (irregular menses, oligomenorrhea or amenorrhea), (5) nervous system effects, such as euphoria, insomnia, changes in mood or psyche, paresthesias and functional symptoms of psychoneurosis, (6) cutaneous striae, (7) weakness, fatigue and exhaustion, (8) impaired carbohydrate tolerance, (9) alkalosis with lowered blood potassium levels, (10) miscellaneous effects such as transient headaches, dizziness or lightheadedness, transient blurring of vision, thinning of the hair, cutaneous pigmentation (especially of the face and neck) and mild purpuric skin lesions. In a few cases signs of hormonal excess have been sufficiently severe to produce the clinical features of Cushing's syndrome; in each instance, however, such signs have disappeared when the drug was discontinued. After cortisone therapy has been stopped, lassitude and muscular weakness

1. Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Effect of a Hormone of the Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis: Preliminary Report, Proc. Staff Meet., Mayo Clin. **24**: 181-197 (April 13) 1949.

2. (*a*) Bauer, W.; Boland, E. W.; Freyberg, R. H.; Holbrook, W. P., and Rosenberg, E. F., in the Proceedings of the Seventh International Congress on Rheumatic Diseases, New York, May 30-June 3, 1949, to be publish-d. (*b*) Boland, E. W., and Headley, N. E.: Effects of Cortisone Acetate on Rheumatoid Arthritis, J. A. M. A. **141**: 301-308 (Oct. 1) 1949. (*c*) Freyberg, R. H.: Effects of Cortisone and ACTH in Rheumatoid Arthritis, Bull. New York Acad. Med. **26**: 206-211 (April) 1950. (*d*) Rosenberg, E. F.: Rheumatoid Arthritis: Experiences with Cortisone (Compound E), Other Adrenal Cortical Steroids, and Pituitary Adrenocorticotropic Hormone, to be published.

3. (*a*) Hench, Kendall, Slocumb and Polley.[1] (*b*) Freyberg.[2c] (*c*) Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Effects of Cortisone Acetate and Pituitary ACTH on Rheumatoid Arthritis, Rheumatic Fever and Certain Other Conditions: A Study in Clinical Physiology, Arch. Int. Med. **85**: 545-666 (April) 1950. (*d*) Boland, E. W.: Relation of the Adrenal Cortex to Rheumatic Disease: A Review of Some Recent Investigations, Ann. Rheumat. Dis. **9**: 1-20 (March) 1950; (*e*) Effects of Cortisone and Adrenocorticotropic Hormone (ACTH) on Certain Rheumatic Diseases, California Med. **72**: 405-414 (June) 1950.

4. Sprague, R. G.; Power, M. H.; Mason, H. L.; Albert, A.; Mathieson, D. R.; Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Observations on the Physiologic Effects of Cortisone and ACTH in Man, Arch. Int. Med. **85**: 199-258 (Feb.) 1950.

lasting for several days or even longer have been noted in a few cases; this has resulted from a temporary suppression of adrenal cortex function.

PREVIOUS EXPERIENCE

In October 1949, our observations on the effects of cortisone acetate in eight patients with rheumatoid arthritis were reported.[2b] Five patients with severe disease received the hormone in large amounts for short periods (total of 1.0 Gm. given over a period of eight days). Three other patients (two with moderate and one with mild rheumatoid arthritis) were given smaller doses of 50 mg. a day for periods of 49, 29 and 30 days, respectively. Although the clinical manifestations were not completely controlled in these three patients with such comparatively small doses, the erythrocyte sedimentation rates became normal and decided improvement resulted. This observation suggested that smaller, and theoretically safer, amounts of cortisone might be sufficient to control some cases of rheumatoid arthritis.

PRESENT INVESTIGATION

The present investigation, the preliminary results of which are reported in this paper, was designed to study the effects of prolonged administration of cortisone acetate on rheumatoid arthritis and to determine, if possible, optimal maintenance dosages of the drug. Since January 1950, when continuing supplies of cortisone were made available to us, 42 patients with rheumatoid arthritis have been given the hormone for periods long enough to allow reportable data. In 40 of the 42 patients cortisone acetate was administered without interruption for periods of more than 60 days, with a range from 61 to 180 days and with an average for the entire group of 125.5 days. In two patients the drug was stopped after 21 and 41 days, respectively, because of inadequate results. Most of the patients with severe and many with moderately severe disease were hospitalized initially and later were treated as ambulatory office patients, but most of those with less severe disease were treated as office patients from the beginning.

SELECTION OF PATIENTS

Of the 42 patients 24 were women and 18 were men. Ages varied from 20 to 70 years. Thirty-one patients had involvement of peripheral joints only, 10 had combined involvement of peripheral joints and the spine, and one had spinal involvement only. The duration of chronic rheumatoid arthritis prior to treatment varied from four months to 26 years, with an average duration of 8.6 years for the group. In 21 patients extra-articular lesions commonly associated with rheumatoid arthritis were present; 15 had subcutaneous nodules, two had iritis or uveitis and one had psoriasis. Erythrocyte sedimentation rates were elevated above normal in all cases.

The arthritis was classified as severe in 14 patients, moderately severe in 15, moderate in 9 and mild in 4. In cases graded as mild there was unmistakable objective evidence of rheumatoid arthritis, including swelling, tenderness and pain on forced motion of involved joints.

GENERAL PLAN OF ADMINISTRATION

Soon after beginning the study we found that the amounts of cortisone required to suppress the disease and to maintain symptomatic control varied widely in individual cases. Two early observations guided us in planning dosage schedules: 1. Best results were obtained by giving large initial doses. 2. The size of the daily dose needed to maintain control appeared to depend more on the severity of the disease process than on any other single factor. Whereas it has not been possible to adhere to strictly uniform schedules, a general plan of dosage has been followed. The schedule of administration for our patients was divided into three stages: (1) period of initial large suppressive doses, (2) period of gradual dose reduction and (3) period of smaller maintenance dose administration. Because it was hoped that each patient would be studied for an extended period, every effort was made to avoid unfavorable reactions. Except for a single injection of 200 or 300 mg. of cortisone on the first day in severe and moderately severe cases, doses averaging 100 mg. per day were not exceeded, and such large doses were continued only long enough to bring the disease under control. In spite of this precaution, however, proposed schedules had to be altered in a few cases because of the early development of side effects.

Initial Large Suppressive Doses.—For severe and moderately severe cases 200 or 300 mg. of cortisone were administered on the first day, followed thereafter by doses of 100 mg. each day. For moderate and mild cases 100 mg. were given on the first and subsequent days. One hundred milligram doses were continued until the clinical manifestations were controlled adequately and the sedimentation rate was approaching normal or had improved significantly.

The period of administration of large doses ranged from seven to 36 days, but, in general, the time required to suppress the signs of the disease lengthened with the severity. The average number of days for initial administration of large doses was 18 days in severe cases (based on 10 cases in which smaller maintenance doses were eventually used), 12 days in moderately severe cases, 10 days in moderate cases and nine days in mild cases. In four of the 14 patients with severe rheumatoid arthritis the response to cortisone in daily amounts of 100 mg. was not sufficiently good to warrant trials with lower doses.

Reduction of Dosage.—When rheumatic activity had been suppressed satisfactorily by 100 mg. doses, the daily amounts of cortisone administered were then reduced. We obtained best results by lowering the dose gradually in steplike fashion by five to 15 mg. per dose at intervals of three to five days, depending on the progress in each patient. As a rule the dose was lowered more slowly in severe than in less severe cases: the average number of days during which the dose was reduced was 21 for severe cases, 15 for moderately severe cases, 12 for moderate cases and 10 for mild cases. Some of our patients who were treated earlier escaped from control when reductions were made abruptly.

Maintenance Dosage.—The smallest average daily amount of cortisone required to maintain adequate control of the clinical manifestations was considered as the patient's "maintenance" dose. Thirty-six of the 42 patients have continued treatment with relatively small average daily doses, ranging from 32 to 65 mg., some for as long as 161, 154, 149, 147 and 138 days; the average number of days for the group of 36 patients has been 94 days.

It has not been necessary to give these smaller amounts of cortisone each day, because larger amounts administered every second day or three times a week

have given just as good results. In other words, 100 mg. injected on Monday, Wednesday and Friday of each week has maintained control as well as has 42.9 mg. given each day. Of the 36 patients who continued therapy with "maintenance" doses, 22 have received cortisone every other day and 14 have been treated three times a week.

RESULTS FROM CORTISONE ADMINISTRATION

Grading of Results.—The response to cortisone administration was graded, according to Hench and his colleagues,[ac] as very marked (90 to 100 per cent improvement), marked (75 to 90 per cent improvement), moderate (50 to 75 per cent improvement), slight (less than 50 per cent improvement) and unimproved. Detailed examinations of the joints were made at intervals; such features as redness, swelling, tenderness, pain on motion and limitation of motion of individual joints were graded and recorded on special charts. Also included were the patients' own estimates of rest pain and stiffness. Increases in functional capacity, improvements in general constitutional symptoms, reductions in erythrocyte sedimentation rates and corrections in anemia were considered in the over-all appraisals of results.

To bring out the relation of improvement and unfavorable side effects to dosage and length of administration, the results have been grouped as follows: (1) initial results from large suppressive doses, (2) results from smaller maintenance doses and (3) unfavorable reactions from large and from smaller doses.

INITIAL RESULTS FROM LARGE SUPPRESSIVE DOSES

Subjective response in rheumatic symptoms and improvement in constitutional reactions were most striking within the first seven to 10 days of cortisone administration. After a few days of administration of large doses (100 mg. daily preceded in more severe cases by an initial injection of 200 or 300 mg.) there was usually distinct reduction of muscular and articular stiffness, lessening of articular tenderness, aching and pain on motion, increased functional capacity, a sense of well-being and perhaps some reduction in joint swelling. Thereafter, with cortisone continued in large or relatively large doses, further improvement occurred but at a slower rate. Objective findings, especially joint effusions, retreated gradually in most cases and lagged behind subjective relief. Reductions in erythrocyte sedimentation rates usually proceeded even more slowly, and at times they did not approach normal values until after three to five weeks of cortisone administration. Thus the maximal over-all improvement usually did not occur until cortisone had been given for two or three weeks, or even for longer periods in severe cases, and was more frequently noted at or near the end of the period of gradual dose reduction rather than at the time when 100 mg. doses were discontinued.

Among the 42 rheumatoid patients in this series, the response to cortisone was very marked in 20 (47.5 per cent), marked in 13 (31 per cent) and moderate in 8 (19 per cent), with no improvement in 1 (2.5 per cent). Thus 33 of the 42 patients (78.5 per cent) experienced more than 75 per cent relief of their over-all disability from large or relatively large doses of the drug.

Very Marked or Marked Improvement.—The results from initial large doses were distinctly better in less severe than in severe cases. Improvement was very marked or marked in only seven of the 14 cases graded as severe. In contrast, improvement was either very marked or marked in 14 of the 15 moderately severe cases, in eight of the nine moderate cases and in all the four mild cases.

Moderate Improvement.—Of the eight patients showing only a moderate degree of improvement from early suppressive doses, the rheumatoid arthritis was graded as severe in six, moderately severe in one and moderate in one. Each of the patients with severe rheumatoid arthritis demonstrated pronounced disease activity and extreme disability: Four were totally bedridden, and two were confined to bed most of the time; each had severe joint deformities and subcutaneous nodules; each had combined spinal and peripheral joint involvement, and initial sedimentation rates were 67, 68, 72, 84, 92 and 110 mm. in one hour (Westergren). Each of these six patients received an injection of 300 mg. of cortisone on the first day and then daily doses of 100 mg. for 27, 32, 36, 39, 61 and 143 days, respectively.

The one patient with moderately severe rheumatoid arthritis who showed only moderate improvement probably received initial 100 mg. doses for too short a time. This woman's immediate subjective response was dramatic, and doses of 100 mg. were given for only seven days after the first dose of 300 mg. The daily amounts of cortisone were then gradually reduced, over a period of 20 days, to 65 mg. per day. Further improvement did not proceed as rapidly as we had anticipated, and, because of slight mooning and hypertrichosis of the face, we did not feel justified in again increasing the dose.

TABLE 1.—*Results in Rheumatoid Arthritis with Initial Large Suppressive Doses of Cortisone*

Severity of Disease	No. Cases	Improvement				
		Very Marked (90-100%)	Marked (75-90%)	Moderate (50-75%)	Slight (Less Than 50%)	Unimproved
Severe.....	14	2 (14.3%)	5 (35.7%)	6 (43%)	.....	1 (7%)
Moderately severe....	15	7 (46.5%)	7 (46.5%)	1 (7%)	.....	.....
Moderate..	9	7 (78%)	1 (11%)	1 (11%)	.....	.....
Mild.....	4	4 (100%)	.....	.....	.....	.....
Total....	42	20 (47.5%)	13 (31%)	8 (19%)	.....	1 (2.5%)

One man with moderate rheumatoid arthritis obtained only a moderate degree of improvement, and we have no explanation for the mediocre result. He received cortisone in 100 mg. doses for 22 days and then smaller doses for 39 days more.

No Improvement.—One patient with severe rheumatoid spondylitis involving both sacroiliac joints, all spinal segments, both hips and both shoulders failed to exhibit either subjective or objective improvement. This man received 300 mg. of cortisone on the first day and 100 mg. daily for 20 days more.

RESULTS FROM MAINTENANCE DOSES

Once the manifestations of rheumatoid arthritis had been suppressed with large daily amounts of cortisone and the dose then gradually reduced, it has been possible, in the majority of cases, to preserve satisfactory improvement with smaller doses of the hormone. In 32 of the 42 patients (76 per cent) the antirheumatic effects of cortisone were adequately sustained for extended periods with the use of daily doses averaging 65 mg. or less (table 2). The grade of improvement with these small doses was equal to that obtained from

larger doses in 24 of the 32 patients (75 per cent). In the eight other patients the degree of relief was inferior to that experienced with larger doses, but it was sufficient to allow them to live in relative comfort and to enable five of them to resume, with some restrictions, their business or household activities.

In 10 (23.8 per cent) of the 42 patients the rheumatic manifestations could not be controlled satisfactorily with doses of cortisone averaging 65 mg. per day or less. Four have been treated with such amounts for prolonged periods with only moderate, and by our criteria inadequate, results; larger doses were not given because each patient exhibited minor but definite evidence of hypercortisonism. Two patients (both with severe rheumatoid arthritis) have been controlled adequately with doses of 75 mg. daily but not with smaller amounts. The remaining four patients (all with severe disease) were not given smaller maintenance doses since they did not experience enough relief on 100 mg. doses to justify trials on lesser amounts.

Severe Cases.—The likelihood of continued improvement with smaller doses has depended chiefly on the severity of the rheumatoid arthritis. Decidedly inferior results have been obtained in severe cases: In only five of 14 patients with severe disease (35.7 per cent) was there satisfactory control with daily amounts of cortisone averaging 65 mg. or less. Furthermore, three of these have escaped control on one or more occasions, and booster doses of 100 mg. daily for a few days have been required to repress the articular flare-ups.

Less Severe Cases.—In contrast to patients with severe disease, nearly all patients with less severe disease have continued to experience adequate relief from rheumatic symptoms on doses of cortisone averaging 65 mg. per day or less. With such amounts all the 15 moderately severe cases (100 per cent), eight of the nine moderate cases (89 per cent) and all the four mild cases (100 per cent) remained adequately controlled. The results were as good as with larger doses in all the moderate and mild cases and in nine of the 15 moderately severe cases.

Size of Maintenance Dose.—The maintenance dose required depended principally on the severity of the rheumatoid arthritis (table 2). Five of the 14 patients with severe disease were given doses averaging 65 mg. or less per day, but only one was controlled with 50 mg. per day whereas three needed 62.5 mg. and one needed 65 mg. In comparison, doses of 50 mg. or less per day were sufficient to control eight of the 15 moderately severe cases (53 per cent), eight of the nine moderate cases (89 per cent) and all of the four mild cases (100 per cent).

Improvement has not always been uniformly maintained, and, in some patients, manipulation of dosage has been required from time to time. A few patients with severe or moderately severe rheumatoid arthritis, which had been controlled satisfactorily for extended periods with the patient's usual "maintenance" doses, have experienced periodic exacerbations or flare-ups of the arthritis. In such circumstances "booster" doses of 100 mg. given for a few (usually four or five) consecutive days have caused the increased symptoms and objective findings to subside and have allowed resumption of the usual maintenance dose schedule.

ILLUSTRATIVE CASES

CASE 1.—A 55 year old housewife had moderately severe rheumatoid arthritis of four years' duration. After an insidious onset the disease progressed gradually to involve most of the joints of both upper and lower extremities. Constitutional symptoms were moderately severe; erythrocyte sedimentation rate was 86 mm. in one hour (Westergren), and functional capacity was greatly restricted. However, she was ambulatory.

Cortisone administration was started on Feb. 6, 1950, the patient being treated as an ambulatory office case from the beginning. Initial large doses consisted of 200 mg. of cortisone acetate on the first day and 100 mg. daily thereafter for 12 additional days. Subjective improvement began within 36 hours after the first dose, and within three days there was complete disappearance of rest pain, decided lessening of stiffness and pain on weight bearing and increased joint motion. Subjective response continued, and after 13 days of large doses joint swelling had subsided to a large degree and the erythrocyte sedimentation rate had decreased to 56 mm. in one hour.

The dose of cortisone was then gradually reduced over a period of 12 days; the daily amounts were lowered 10 mg. every three days until a dose of 50 mg. a day was reached. Subjective and objective improvement continued, and over-all improvement at the end of the 12 days of gradual dose reduction was graded as very marked (90 per cent or more relief). The sedimentation rate continued to fall and by this time was 32 mm. in one hour.

Maintenance doses of 50 mg. were given daily for five days, and 100 mg. every other day was administered for 10 more days. The maintenance dose was then reduced to 100 mg. on Monday, Wednesday and Friday of each week (average 42.9 mg. per day); this dosage has been continued now for 17 weeks. Improvement has remained almost as great as when larger doses were given, although the patient has intermittently noted slight articular aching and stiffness and there has been slight residual tenderness of a few joints. The sedimentation rate has ranged from 28 to 34 mm. in one hour and has never reached normal values.

Comment.—The general dosage schedule followed in our study is illustrated by this case. Improvement with doses averaging 42.9 mg. per day has not been as great as when larger doses were given, but it has been satisfactory and adverse effects from the drug have

TABLE 2.—*Results in Rheumatoid Arthritis with Maintenance Doses of Cortisone Averaging 65 Mg. a Day or Less*

Severity of Disease	No. Cases	Cases Adequately Controlled with Smaller Doses (65 Mg. Daily or Less)	Degree of Improvement Same as with Larger Doses, No. Cases	Degree of Improvement Less Than with Larger Doses but Adequate, No. Cases	Average Daily Maintenance Dose Used (Mg.), No. Cases					Not Controlled Adequately with 65 Mg. Daily or Less, No. Cases	Smaller Doses* Not Tried, No. Cases
					32.0 (75 Mg. 3 × Wk.)	42.9 (100 Mg. 3 × Wk.)	50.0 (100 Mg. Every 2 Days)	62.5 (125 Mg. Every 2 Days)	65.0 (130 Mg. Every 2 Days)		
Severe	14	5 (35.7%)	3	2	0	0	1	3	1	5†	4
Moderately severe	15	15 (100%)	9	6	1	3	4	7	0	0	0
Moderate	9	8 (89%)	8	0	2	4	2	0	0	1	0
Mild	4	4 (100%)	4	0	0	4	0	0	0	0	0
Total	42	32 (76%)	24	8	3	11	7	10	1	6	4

* Not tried because response was inadequate with doses of 100 mg. per day.
† Two patients with severe disease controlled adequately with 75 mg. per day.

been averted so far. To us it seems more prudent to sustain adequate improvement with smaller doses than to strive for absolute control with large and less safe doses of the hormone. As illustrated in this patient, the sedimentation rate often continues to decrease during the period of dose reduction. Persistent slight or moderate elevations in the rate during maintenance dose administration, though indicating that the disease is still active, have not concerned us as long as there has been sustained clinical improvement.

CASE 2.—A 38 year old man had chronic rheumatoid arthritis of 15 years' duration. At first the articular manifestations were episodic in type, but for four years the disease was persistent and progressive, involving more and more peripheral joints. For four months disability was so great that he was forced to take a leave of absence from his work as an office manager. The erythrocyte sedimentation rate was 62 mm. in one hour (Westergren), and the disease was graded as moderately severe.

Comment.—This case illustrates how relatively small alterations in dosage may effect control of the disease. Whereas satisfactory improvement was maintained with amounts of cortisone averaging 62.5 mg. a day, the arthritis was not adequately controlled on doses averaging 50 mg. a day. Booster doses, such as were given to this patient, to repress exacerbations resulting from either exogenous or endogenous causes, have been needed occasionally in some patients with severe or moderately severe disease.

ADVERSE EFFECTS FROM CORTISONE ADMINISTRATION

General Incidence.—Undesirable side effects from cortisone were exhibited by more than one third of our patients—15 of the 42 (table 3). Actually they were encountered 17 times, because they developed on two separate occasions in two patients (once with large and again with smaller doses). Reduction of dosage was

TABLE 3.—*Adverse Effects from Cortisone Administration*

		Onset of Reactions		Outcome of Reactions			Altered Fluid Balance				Abnormal Fat Deposit	Increased Androgen Activity		Menstrual Changes		Nervous System Effects				Miscellaneous Effects				
Case	Sex	With Large Doses (100 Mg. Daily)	With Smaller Doses (65 Mg. or Less)	Disappeared with Dose Reduction	Improved with Dose Reduction	Disappeared After Withdrawal	Edema	Polydipsia	Oliguria	Sudden Weight Gain	Mooning of Face	Acne	Hypertrichosis	Hoarseness	Amenorrhea	Oligomenorrhea	Nervous Tension	Marked Insomnia	Functional Symptoms	Mental Depression	Decreased Carbohydrate Tolerance	Purpuric Lesions	Blurred Vision	Pigmentation	Thyroid Enlargement
1	F	+	..	+	..	..	+	+	+	+	..	..	+	..	..	..	+	+	+	+	..	..	+	..	+
2	M	+	..	*	..	..	+	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	M	+	..	†	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	+	..	..
4	F	+	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	F	+	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	M	+	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	+	..
7	F	..	+	+	..	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..
8	F	+	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	..
9	F	+	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..
10	F	+	..	..	+	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	F	+	..	..	+	..	+	..	..	..	+	..	+	+	..	+	..	..	..	..	..	..	..	..	..
12	F	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	..	..	..	..	+
13	F	+	+	..	..	+	+‡§	..	..	+‡§	+‡	..	..	..	..	..	..	..	..	..	..	..	+§	..	..
14	F	+	+	+‡	..	+§	..	..	..	..	..	+§	+§	+§	+§	..	..	..	..	..	..	+‡	..	..	+
15	M	+	..	‖	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..

* Doses of 100 mg. continued without further increase in adverse signs.
† With dose reduction glucose tolerance improved but did not return to precortisone level.
‡ Onset with 100 mg. doses (see text).
§ Onset with doses of 65 mg. or less (see text).
‖ Glucose tolerance remained abnormal with smaller doses, but no evidence of clinical diabetes appeared.

Cortisone therapy was started on Jan. 12, 1950. Initial doses consisted of 200 mg. on the first day followed by 100 mg. a day for 14 days. Improvement began approximately 72 hours after the first injection and continued throughout the period of large dose administration. The sedimentation rate at the end of 15 days had decreased to 38 mm. in one hour. A gradual reduction in dosage was then accomplished over a period of 14 days. Ninety milligrams per day were given for three days, 85 mg. a day for three days, 80 mg. a day for four days and 75 mg. a day for four days. The sedimentation rate had decreased to 18 mm. in one hour, and over-all improvement at the end of this period was graded as marked (75 to 90 per cent improvement).

Maintenance doses of 65 mg. per day were begun on Feb. 10, 1950. Ten days later the dose was reduced further to 125 mg. every other day. Improvement, equal to that noted with larger doses, continued for one month. The dosage was then decreased to 100 mg. every other day. After five days of this dosage articular pain, stiffness and tenderness became greater and swelling in two joints returned. The amount of cortisone was then increased to 125 mg. every other day, and the articular manifestations subsided. With this dosage adequate control has been maintained except for one occasion, when an articular flare-up involving both wrists and the right knee developed. This occurred after the patient had played 18 holes of golf and then had attended a party which lasted most of the night. The exacerbation subsided after daily "booster" doses of 100 mg. of cortisone for five days.

the only method employed for controlling hormonal side effects in this series of cases. We deliberately avoided other methods, such as reduction of salt and fluid intake, the use of potassium chloride as a diuretic or as a replacement of lost potassium, the use of estrogen in an attempt to avert androgenic effects or the use of testosterone to control nitrogen loss.

The untoward signs were usually mild, never more than moderate in intensity, and either disappeared or notably improved with lowering the dosage or discontinuance of the hormone. Of the 17 reactions 12 were graded as mild and five as moderate. After their appearance the dose of cortisone was reduced on nine occasions, and as a result the signs disappeared in six and improved decidedly in three. Administration was stopped in three instances, and in each the adverse reaction promptly subsided. One patient was treated with 100 mg. doses for 96 days after the appearance of mild pigmentation and mooning of the face, but no accentuation of these signs ensued. In three patients (two with altered carbohydrate tolerance and one with slight hypertrichosis of the face) treatment was continued with smaller maintenance doses, and to date no increases in the findings have resulted.

Incidence in Relation to Dosage.—Decidedly fewer unfavorable reactions were encountered with administration of smaller maintenance doses than with administration of large initial doses. Adverse signs appeared in 14 of the 42 patients (33 per cent) while doses of 100 mg. daily were being administered. In contrast, unfavorable reactions developed in only three of the 36 patients (8.3 per cent) while maintenance doses averaging 65 mg. per day or less were being given.

Of the three patients in whom adverse effects developed with maintenance doses, two had previously exhibited reactions to initial large doses. Moderate general anasarca developed in one of them after 13 daily injections of 100 mg. of cortisone. The fluid retention disappeared five days after the drug was withdrawn but recurred with reinstitution of cortisone therapy in doses averaging 50 mg. per day. The other patient displayed a purpuric rash on the lower extremities while she was being given initial large doses. The lesions disappeared when dosage was reduced, but after 19 days of amounts of cortisone averaging 50 mg. a day there developed acne, mild facial hypertrichosis, amenorrhea, thyroid enlargement and slight mooning of the face. A mild purpuric rash on the lower legs and slight facial edema after 40 days on 50 mg. doses developed in the third patient exhibiting adverse effects from small doses; the rash disappeared when the amount of cortisone was reduced to 32 mg. a day (75 mg. three times a week), and the arthritis remained improved.

Thus comparatively few unfavorable side reactions from cortisone have been encountered so far when the amounts injected have not exceeded an average of 65 mg. per day. While some of our patients have received these smaller doses continuously for as long as 161 days, and the average period of maintenance dose administration for the group of 36 patients has been 94 days, this time may not be long enough to allow conclusive data regarding the safety of these doses.

Incidence in Relation to Sex.—As has been pointed out by others,[5] untoward reactions are more likely to develop in women presumably because their hormonal mechanisms are more complex. Our experience parallels this observation: Of the 15 patients showing adverse effects, 11 were women and four were men; these represented 45.8 per cent of the 24 women and 22.2 per cent of the 18 men in the series. The reactions in two of the four men consisted of alterations in carbohydrate metabolism, and the other two had slight mooning and pigmentation of the face after receiving 100 mg. doses daily for long periods. Signs of altered fluid balance, increased androgenic activity and troublesome psychic alterations were restricted to women in our group of patients.

Individual Side Effects.—Four of the 15 patients experienced only one adverse effect, but multiple metabolic or clinical signs of hypercortisonism developed in 11. The various reactions which were noted are enumerated in table 3.

Fluid Retention: Retention of fluid was the most frequent undesirable effect noted. Visible edema, usually of the lower legs or face, occurred on 11 occasions; it was mild in seven, but in four it was graded as moderate and was accompanied by sudden gains in weight. In nine of the 11 instances edema appeared during the administration of initial large doses (100 mg.). In eight of these it was transient and rapidly disappeared when smaller amounts of cortisone were given. Drug therapy was stopped on one occasion because of generalized anasarca; the retained fluid disappeared on withdrawal of the drug, but when treatment was resumed, this time in doses of 50 mg. per day, generalized edema reappeared. Slight facial edema occurred in one patient while she was receiving average daily doses of 50 mg. but subsided when the amount of cortisone was reduced to an average of 32 mg. per day.

Deposition of Adipose Tissue: Three women complained of increased pelvic girth, but this appeared to be commensurate with general gains in body weight. Rounding or "mooning" of the facial contour, disproportionately greater than general weight increases, occurred in five patients; it was mild in four and moderate in one. The "mooning" developed in four patients during the administration of 100 mg. doses and in one while maintenance doses averaging 50 mg. daily were being given.

Androgenic Effects: Acne of a moderate degree developed on the face, shoulders, buttocks and legs of one woman after 51 days of cortisone therapy (large or relatively large doses for 19 days and the 50 mg. doses for 32 days). Concomitantly she exhibited mild facial hypertrichosis and slight hoarseness (accompanied also by moderate increase in the size of a preexisting adenomatous goiter and by amenorrhea). The signs of increased androgen activity disappeared, except for slight residual fuzzy hair growth, within 21 days after hormone therapy was stopped. Two other female patients noted hypertrichosis of the face and some deepening of the voice.

Increased Libido: Four of the 18 men noted increased libido and potentia during the early part of cortisone administration, but after the dose was lowered sexual urge and function returned to normal. No instance of decreased libido or impotence was recorded. Inquiries regarding sexual interest were made of several but not of all women patients; those questioned denied changes in libido.

Abnormal Menstruation: Menstrual changes occurred in two patients; amenorrhea in one and oligomenorrhea in the other. It is interesting that androgenic effects developed simultaneously in both (table 3).

Nervous System Effects: Almost every patient in this series experienced some psychic change, but oftener this was a desirable rather than an undesirable effect. Beneficial reactions most commonly consisted of feelings of well-being and improvements in mental attitude. Patients who were depressed and grumpy and who had hopeless outlooks or were resigned to their plight beforehand usually became cheerful, hopeful and elated within a few days after cortisone therapy was started. Increased mental activity and capacity and a clearing up of the thought processes were described by several. Some patients found themselves with new ideas or business schemes, and their increased psychomotor function and drive were expressed through purposeful and gainful activity.

The degree of mental stimulation appeared to depend on (1) the size of the daily dose of cortisone given and (2) individual susceptibility. Psychic effects almost always were more pronounced during the admin-

5. Freyberg,[3c] Hench, Kendall, Slocumb and Polley,[3c] Sprague, Power, Mason, Albert, Mathieson, Hench, Kendall, Slocumb and Polley.[4]

istration of 100 mg. doses. Euphoria, insomnia, restlessness and "nervous tesion" subsided soon after the institution of smaller maintenance doses. With average daily doses of around 50 mg. most patients stated that they felt "about normal" or perhaps noted a sense of well-being which was slightly greater than before the onset of arthritis. In a few patients psychically stimulated by initial large doses the accelerated psychomotor activity tapered off before dose reduction was started.

Troublesome nervous system effects developed in only two patients. Both were women in their climacteric who had been emotionally unstable for a number of years prior to cortisone administration. Both had adenomatous goiters without definite evidence of hyperthyroidism, but during cortisone therapy the goiters became visibly and palpably greater in size. One patient experienced, after 100 mg. of the hormone had been given for 11 consecutive days, pronounced nervousness, irritability, insomnia and multiple somatic complaints which were functional in quality. Similar symptoms, together with mild mental depression, developed in the second patient after 12 days of treatment with 100 mg. doses. When the amount of cortisone was reduced to 50 mg. daily, the nervous symptoms subsided completely in the first patient and improved greatly in the second.

Changes in Carbohydrate Tolerance: Standard carbohydrate tolerance tests were done before, and at varying intervals during, cortisone therapy in 24 of the 42 patients. Before cortisone therapy results of tests were normal in 21 patients and abnormal in three. Of the three patients with initially abnormal tolerances, two exhibited curves typical of latent diabetes mellitus, and in the other the findings were those of renal glycosuria. One of the patients with latent diabetes has received cortisone continuously for 98 days; there has been no evidence of clinical diabetes, and results of repeated tolerance tests have not changed. The other diabetic patient has been given cortisone continuously for 79 days (large or relatively large doses for 20 days and maintenance doses averaging 50 mg. for 59 days); some intensification of the diabetes, as evidenced by irregular glycosuria and more pronounced changes in the tolerance tests, has resulted, but neither dietary restriction nor insulin has been required. The laboratory status of the patient with renal glycosuria has not changed after 174 days of hormone administration.

In two of the 21 patients with initially normal glucose tolerance tests significant decreases in their tolerances during cortisone therapy developed. A diabetic type of curve was discovered in one patient 133 days after the start of cortisone therapy and in the other after 104 days. Both patients were being maintained, at the time of discovery, on smaller doses (average of 65 mg. per day in one and 32 mg. in the other). Administration of cortisone has been continued in both patients; neither of them has exhibited glycosuria or other clinical evidence of diabetes.

Miscellaneous Effects: Miscellaneous symptoms, such as headaches, slight dizziness and lightheadedness, have been noted by a few patients during the early part of treatment. Transient mild blurring of vision was noted by five patients. In each instance the visual difficulty developed during the first few days of treatment with 100 mg. doses; it lasted a day or two and then cleared up spontaneously without alteration of the dosage. Evidence of fluid retention occurred concurrently in each case, which suggests that the visual disturbance may have been due to alterations in intraocular fluid balance.

Mild purpuric rashes on the lower legs occurred in two women; the rash appeared in one with large doses and in the other with smaller doses. The lesions cleared in both with reduction of dosage.

Slight cutaneous pigmentation, perceptible on the posterior cheek and anterior part of the neck, was found in two patients, both of whom received 100 mg. doses for prolonged periods. No other signs of increased melanotic activity, such as pigmentation in palmar creases, axillas, postoperative scars and mucosal surfaces, were observed. Cutaneous striae were not found in any of our patients. As others have pointed out,[6] striae are more likely to occur in adolescent girls, and our series contained no young girls.

Spontaneous fractures occurred in two elderly patients during the course of cortisone therapy. Both had severe and long-standing rheumatoid arthritis with roentgenographic evidences of generalized osteoporosis beforehand, and both had pretreatment glucose tolerance curves characteristic of latent diabetes mellitus. One, a 70 year old woman whose rheumatic complaints were being held under excellent control, experienced, without known injury, severe pain on weight bearing in the right hip after 34 days of cortisone administration. Roentgenograms revealed a fracture of the femoral neck with pronounced displacement, and at subsequent open surgical reduction osteoporosis at the fracture site was found to be extreme. The other patient, a 65 year old man, experienced, without history of trauma, severe lower back pain after 73 days of hormone administration. Roentgenographic examination disclosed a compression fracture of the body of the twelfth thoracic vertebra. Whether the spontaneous fractures were merely coincidental with cortisone therapy, were attributable to the hormone or were related to the preexisting latent diabetes mellitus remains in question.

EFFECT OF CORTISONE WITHDRAWAL

Cortisone therapy has been discontinued in 15 of the 42 patients of this series. Fourteen of these had experienced antirheumatic effects during administration, while one patient (with severe rheumatoid spondylitis) failed to exhibit either improvement or aggravation of symptoms after use of the drug. Of the 14 patients who showed antirheumatic response, relapse, either total or partial, occurred in each after the drug was withdrawn. Rheumatic activity returned regardless of the length of administration, the total dose given, the size of the maintenance dose, the initial severity of the disease, the presence or absence of adverse reactions, the completeness of improvement or the method of withdrawal.

Relapse began promptly (within a few days) and proceeded rapidly in five patients, whereas it developed more slowly, over periods of two to six weeks, in nine. The antirheumatic effect was lost completely in 12 of the 14 patients; four suffered rebound relapses, presumably due to temporary suppression of adrenal cortex function,[3c] characterized by immediate severe articular flare-ups which later settled down, after two to six weeks, so that eventually the over-all disability approximated that present prior to cortisone therapy. Two

6. Hench, Kendall, Slocumb and Polley.[3c] Sprague, Power, Mason, Albert, Mathieson, Hench, Kendall, Slocumb and Polley.[4]

patients have retained less than 50 per cent of their improvement for more than two months following withdrawal.

These experiences lead us to believe that holding the improvement from cortisone is contingent, in most instances at least, on continued administration of the drug. One of our earlier patients reported previously [2b] experienced a secondary and sustained partial remission following an initial short relapse on cortisone withdrawal, but so far this phenomenon has not been witnessed in patients included in the present study.

Posthormonal muscular weakness and exhaustion lasting two to six weeks, as described by others,[7] developed in four of the 15 patients after cortisone administration was stopped. It occurred in two of eight patients on abrupt withdrawal of the drug and in two of seven patients whose dosage was gradually tapered off over periods of two to three weeks. It should be emphasized, however, that such symptoms of transient adrenal cortex insufficiency were not noted in any case while the administration of smaller doses of cortisone was being continued, even though the daily quantities given were gradually reduced from 100 mg. initially to as low as 32 mg. on maintenance schedules.

COMMENT

Only time and further experience will determine the full therapeutic possibilities of cortisone for rheumatoid arthritis. Explorations of its potentialities as a treatment agent are greatly influenced by one fact: The hormone suppresses rheumatic activity but does not cure the underlying disease. Thus it appears that if antirheumatic effects are to be sustained, cortisone must be given continuously. The question as to whether the hormone can be administered safely and effectively for extended periods of many months or years will not be answered positively until there has accumulated greater clinical experience in relation to dosage and methods of administration, greater knowledge regarding its physiologic activities and more information as to the consequences of its prolonged or repeated use.

From the preliminary studies reported herein, however, it appears that some severe cases and most less severe cases of rheumatoid arthritis may be kept under adequate clinical control for long periods with smaller maintenance doses of cortisone ranging from 32 to 65 mg. a day, provided larger doses to suppress the disease are employed initially. Comparatively few unfavorable reactions have developed when these smaller doses have been used continuously for as long as six months. Apprehension has been expressed by some physicians that the persistent use of cortisone for months or years might lead to permanent adrenocortical atrophy. But this does not appear likely, and so far all adverse effects have been temporary, disappearing on hormone withdrawal or on lowering of the dosage. A comforting analogy may be found in certain cases of Cushing's disease which result from a unilateral tumor of the adrenal cortex. In such instances the contralateral adrenal cortex may undergo distinct atrophy, and yet its function returns, even years later, when the hyperfunctioning tumor is surgically removed.

Hench and his co-workers [3c] have suggested that interrupted therapy or a "course method" might provide a more physiologic response than would continuous administration. A few of their patients who were treated intermittently or with intermittent but alternating courses of cortisone and ACTH have experienced temporary secondary remissions. This suggested to them that remissions resembling spontaneous ones might be produced in some cases by interrupted therapy. Undoubtedly future schemes of administration will be greatly influenced by the introduction of oral cortisone in tablet form; that the hormone is highly effective when taken orally was recently announced by Freyberg and associates [7c] and confirmed by Hench and his group.[8]

SUMMARY AND CONCLUSIONS

1. Forty-two patients with chronic rheumatoid arthritis were given cortisone acetate continuously for extended periods with the purpose of determining the dosage which would sustain satisfactory clinical control and yet avoid or minimize adverse side effects from the hormone. The schedule of administration was divided into three stages: (1) period of initial suppressive large doses, (2) period of gradual dose reduction and (3) period of smaller maintenance dose administration.

2. The response to initial large or relatively large daily amounts of cortisone varied in general with the severity of the disease. Very marked or marked improvement resulted in 50 per cent of severe cases, 93 per cent of moderately severe cases, 89 per cent of moderate cases and 100 per cent of mild cases.

3. Once the disease was suppressed by initial large doses and the dose then gradually reduced, it was possible to maintain satisfactory improvement with smaller daily amounts of the hormone, ranging from 32 to 65 mg. per day, in 32 (76 per cent) of the 42 patients. Again best results were obtained in patients with less severe rheumatoid arthritis; with these smaller doses satisfactory results were maintained (some for as long as six months) in 35 per cent of severe cases, 100 per cent of moderately severe cases, 89 per cent of moderate cases and 100 per cent of mild cases.

4. It has not been necessary to give the smaller amounts of cortisone each day, as larger doses given every other day or three times a week have provided antirheumatic effects which were equally good.

5. The incidence of adverse side effects from the hormone was decidedly less when smaller doses were used. With average daily doses of 65 mg. or less, signs of hypercortisonism occurred in only 8.3 per cent of the patients. In contrast, they developed in 33 per cent of patients when doses of 100 mg. daily were being given.

6. From the study reported it appears that some severe cases and most moderately severe, moderate and mild cases of rheumatoid arthritis may be kept under adequate clinical control for long periods, and with relative safety, with smaller maintenance doses of cortisone, provided larger doses to suppress the disease are employed initially.

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7. (*a*) Hench, Kendall, Slocumb and Polley.[3c] (*b*) Sprague, Power, Mason, Albert, Mathieson, Hench, Kendall, Slocumb and Polley.[4] (*c*) Freyberg, R. H.; Patterson, M.; Adams, C. H.; Durivage, J., and Traeger, C. H.: Practical Considerations of the Use of Cortisone and ACTH for Rheumatoid Arthritis, read before the American Rheumatism Association, San Francisco, June 23, 1950, to be published.

8. Hench, P. S., in discussion on Freyberg and others.[7c]

ONE HUNDRED PER CENT OXYGEN IN THE TREATMENT OF ACUTE MYOCARDIAL INFARCTION AND SEVERE ANGINA PECTORIS

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Arterial anoxemia remains the prime indication for oxygen therapy in circulatory failure. When this disorder arises as a result of acute myocardial infarction, the administration of oxygen may relieve dyspnea, cyanosis and cardiac pain and tide the patient over the initial crucial stages of the attack. The diminution in the work of the heart and increased supply of oxygen for the myocardium may conceivably reduce the size of the resultant infarct in subjects with well developed collateral coronary circulations previous to complete occlusion. Oxygen inhalation therefore appears to be an important therapeutic measure in those cases of acute myocardial infarction in which cardiac damage and disturbance in function result in a secondary generalized arterial anoxemia.

Within recent years the administration of oxygen at concentrations of 80 to 100 per cent has been advocated for the relief of intractable pain accompanying sudden major coronary arterial occlusion.[1] It is claimed that even in the absence of pulmonary edema and subnormal oxygen saturation of the arterial blood such therapy is frequently effective in controlling pain which has not responded to large doses of opiates. A similar effect has been described in extreme cases of angina pectoris, in which paroxysms are occasioned by the slightest exertion or excitement. According to this view,[2] the administration of 100 per cent oxygen increases the amount of oxygen in arterial blood from the normal of about 19.5 cc. to about 22.2 cc. per 100 cc. of blood. This increase in the oxygen content of the blood (due primarily to increased oxygen tension of the plasma) results in delivery of oxygen to the myocardium under correspondingly increased pressure. It is assumed that such increase in the pressure under which oxygen is delivered to the myocardium is capable of alleviating the local anoxia attending acute myocardial infarction or a paroxysm of angina pectoris. If this is the case, the most favorable effects may be anticipated in subjects with well developed collateral coronary circulation, since in normal animals, which have no functional collaterals, administration of oxygen has proved valueless in experimental occlusion.[3]

In spite of these theoretical considerations, the administration of 100 per cent oxygen for attacks of angina pectoris and for pain accompanying acute myocardial infarction without arterial anoxemia has in our experience offered little benefit. On the contrary, in such cases of acute myocardial infarction the apprehension and discomfort frequently provoked by use of a mask in patients in whom the administration of oxygen implies the existence of a moribund state has often appeared to be distinctly detrimental. Since this form of therapy is now widely used in the management of acute cardiac infarction and severe angina pectoris, frequently without regard to the patient's own opinion of its value, it seemed important to determine whether or not high concentrations of oxygen actually relieve clinical states of coronary insufficiency which are unattended by generalized arterial anoxemia. In previous studies[4] we investigated the modifying influence of various drugs on the electrocardiographic response to standard exercise in patients with coronary insufficiency. It was pointed out that certain cases of angina pectoris show transient electrocardiographic changes (RS-T segment depression and T wave inversion) of constant pattern in response to the Master two-step test. In such patients it is possible to determine the specific effect of various drugs in preventing these previously recorded electrocardiographic patterns of myocardial anoxia. Consequently this method of study appeared favorable for assessing objectively both the prophylactic and therapeutic effect of oxygen (in high concentrations) on experimentally induced coronary insufficiency in human subjects.

MATERIAL

More than 100 patients with angina pectoris were screened by means of the Master two-step test,[5] and of this number there were selected for study five patients in whom this procedure evoked a constant positive electrocardiographic response from day to day. In each of these patients, moreover, the administration of a tablet of nitroglycerin (glyceryl trinitrate) 1/150 grain (0.4 mg.) five minutes before exercise either completely or partially prevented the patterns of myocardial ischemia previously observed in the control tracings. After the use of this drug, three patients (cases 1, 2 and 3) showed a normal response to exercise while the remaining two manifested a positive response of minimal degree. One patient (case 5) had sustained a myocardial infarct six months prior to admission, but in the other cases no clinical or electrocardiographic evidence of similar infarction was obtained. All the patients had a moderate degree of angina of effort of at least several months' duration. Until the time of hospitalization, however, each patient had engaged in vigorous activity as a seaman in the Merchant Marine.

METHOD

The patients followed the standard hospital regimen, being up and about the wards daily. Tests were performed in the research electrocardiographic laboratory at precisely the same time each day and by the same observers. Only one exercise test was performed in any 24-hour period. Control records were obtained by applying a B-L-B oxygen face mask (oronasal type)[6] so regulated that the patient was merely breathing room air. The mask was applied five minutes before the test and was worn continuously throughout the period of exercise and for the 10 minute interval immediately thereafter. After the response characteristic for each patient had been recorded by obtaining a number of control studies, the identical procedure was carried out with the mask adjusted to deliver 100 per cent oxygen. Each observation was repeated at least once. The rubber tubing between B-L-B mask and the oxygen tank

This study was carried out as a joint project with the National Heart Institute.

From the Cardiovascular Research Unit, Department of Internal Medicine, United States Marine Hospital; consultant in cardiovascular disease, Dr. Russek.

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5. The Master two-step test is a procedure in which the patient ascends and descends a two-step staircase 20 to 30 times depending on age, sex and weight. Electrocardiograms are recorded immediately after the exercise and at two minute intervals thereafter for a period of 10 minutes. A depression of the RS-T segment in excess of 0.5 mm. in any of the tracings is regarded as abnormal.
6. The B-L-B mask is named for its designers, Boothby, Lovelace and Bulbulian.

was sufficiently long to prevent interference with the performance of exercise. The concentration of oxygen in the breathing bag was repeatedly checked before and after the test by means of the Beckman Oxygen Analyzer (Linde). In all instances the concentration of oxygen was shown to be 100 per cent by this instrument.

RESULTS

In each of the five cases studied the administration of 100 per cent oxygen was without effect in preventing the RS-T segment and T wave changes observed in the control records. Similarly, the continuous administration of 100 per cent oxygen during the postexercise period failed to hasten the disappearance of the electrocardiographic manifestations of myocardial anoxia. On the contrary, when 100 per cent oxygen had been administered these changes were either more pronounced or longer in evidence in four of the five cases. In every instance, moreover, oxygen failed to prevent the onset of anginal pain or to influence its duration. In striking contrast, the administration of one tablet of nitroglycerin ($\frac{1}{150}$ grain) before the test not only prevented the subsequent development of anginal pain but greatly influenced the electrocardiographic response to standard exercise.

COMMENT

The administration of oxygen is a valuable therapeutic measure in cases of acute myocardial infarction in which the development of pulmonary congestion or edema has resulted in a secondary generalized arterial anoxemia. Striking relief of pain and restlessness, improvement in respiration, diminution in cyanosis and other objective signs of favorable response have been reported by various authorities. The usefulness of high concentrations of oxygen for the alleviation of intractable pain in acute myocardial infarction (unattended by arterial anoxemia) and in severe paroxysms of angina pectoris, however, has not been strongly established by clinical observation. Indeed, the question whether or not hyperoxygenated blood is capable of influencing local myocardial anoxia in such cases has not been satisfactorily answered. In normal dogs, which have no functional collaterals, the administration of high concentrations of oxygen has proved valueless for experimentally produced myocardial infarction.[3] In human subjects, however, well developed collateral coronary circulations frequently exist previous to complete occlusion so that, theoretically at least, the administration of 100 per cent oxygen might exert a beneficial action.

The studies herein reported fail to confirm such an effect from the employment of high concentrations of oxygen in acute coronary insufficiency. In five patients with angina pectoris the administration of 100 per cent oxygen did not favorably influence the onset or duration of pain or the electrocardiographic alterations induced by standard exercise. On the contrary, oxygen therapy actually appeared responsible for more pronounced and persistent electrocardiographic changes in several patients. Such observations obviously require explanation if it is assumed that hyperoxygenated blood was delivered via collateral channels to potentially ischemic areas of the myocardium. The dramatic response to nitroglycerin does appear to offer evidence that functionally significant collateral vessels exist in each of these cases. If this is so, how may we explain the parodoxical response to oxygen in some of these patients? It is known that vasodilator substances appear whenever relative ischemia or anoxemia of the heart occurs. In like manner temporary occlusion of a coronary vessel is followed by a powerful reactive hyperemia. A mechanism therefore exists which adapts the coronary flow to the needs of the moment. Just as nitroglycerin appears to augment this vasodilator response, it is possible that hyperoxygenated blood may prevent or reverse it so that local anoxia of equal or greater degree is evoked by a standard stimulus.

These observations appear to indicate that oxygen therapy is without value in cases of acute myocardial infarction and angina pectoris in which the oxygen saturation of arterial blood is normal. Indeed, the evidence presented does not support the contention that hyperoxygenated blood is capable of influencing anoxia solely confined to an area of myocardial tissue. The false hope that the size of the resultant infarct in such cases can be influenced by oxygen therapy should therefore be abandoned. Similarly, no benefit should be anticipated from the administration of 100 per cent oxygen for the relief of recurrent or intractable pain in these patients.

It is generally believed that the administration of oxygen can do no harm in the treatment of patients with acute myocardial infarction. Certainly it should be employed in all cases in which there is dyspnea, cardiac asthma, pulmonary edema, Cheyne-Stokes respiration and cyanosis. It is worthy of trial in the absence of clear evidence of arterial anoxemia if the latter is suspected or regarded as partially responsible for intractable pain. Its continuation, however, should be based on evidence of objective or subjective improvement of the symptom for which it was administered. The indiscriminate use of oxygen therapy may contribute nothing to the patient's ultimate recovery and yet add considerably to his anxiety and discomfort during the most acute phase of the disease. Administration of oxygen to most patients carries the implication that they are critically ill. When placed in an oxygen tent, some patients develop a sense of claustrophobia. They cannot be easily nursed or satisfactorily fed. They are often shockingly disturbed by the attendant's replenishment of the ice compartment or oxygen supply. Administration of oxygen by nasal catheter frequently leads to irritation or inflammation of the pharynx, which causes hacking and coughing, both undesirable efforts. The use of a mask often produces discomfort and a state of anxiety. Patients frequently plead with their physicians to discontinue the administration of oxygen, an occurrence not uncommon in those cases in which this form of therapy is superfluous. The administration of 100 per cent oxygen may actually be contraindicated in patients in whom oxygen saturation of arterial blood is normal. As pointed out above, it is possible that hyperoxygenated blood may interfere with the reactive hyperemia which results from myocardial anoxia.

SUMMARY AND CONCLUSIONS

High concentrations of oxygen have been advocated for the relief of intractable pain accompanying acute myocardial infarction and severe paroxysms of angina pectoris even in the absence of arterial anoxemia. In order to determine whether the administration of 100 per cent oxygen is capable of influencing anoxia solely confined to an area of myocardial tissue, the effect of this therapy on the electrocardiographic response to standard exercise (Master two-step test) was studied in 5 patients with angina pectoris. The following observations were made:

1. The administration of 100 per cent oxygen did not prevent the RS-T segment and T wave changes induced by standard exercise and failed to hasten the disappearance of these manifestations of myocardial anoxia. On the contrary, more pronounced and prolonged electrocardiographic alterations were observed in several patients when treated in this manner.

2. The administration of 100 per cent oxygen failed to prevent the onset of anginal pain or to influence its duration.

3. In striking contrast, administration of one tablet of nitroglycerin (glyceryl trinitrate) 1/150 grain (0.4 mg.) not only prevented the development of anginal pain but greatly modified the electrocardiographic response to standard exercise in each case.

From these observations, it is concluded that inhalation of 100 per cent oxygen does not influence myocardial anoxia in patients with acute cardiac infarction or angina pectoris in whom the oxygen saturation of arterial blood is normal. Therefore, benefit should not be anticipated in such cases when this form of therapy is administered for the relief of intractable pain. Some evidence suggests that hyperoxygenated blood may actually interfere with the reactive hyperemia which is evoked by myocardial anoxia. We wish to strongly emphasize that oxygen should be freely administered when an indication for its use is recognized or even suspected. Its indiscriminate employment, however, may result in more harm than good in the individual case.

PLAGUE

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Five cases of plague occurred in the state of New Mexico from July 1949 through July 1950. Eight additional suspected cases have been observed during the same period, in California, Montana, Nevada, New Mexico, Texas and Utah. Because these totals are considerably above previous averages, they should serve as potent warnings to practicing physicians in western states to consider plague in the differential diagnosis whenever axillary or inguinal lymphadenopathy is encountered. It is hoped that this reminder will be made more forceful by the following presentation of the epidemiology of plague in the country, together with the clinical and laboratory findings of the five New Mexico cases.

During the past fifty years, epidemics of human plague, totaling over 400 cases, have taken place in California, Washington, Louisiana, Texas and Florida. With the exception of the 1919 Oakland, Calif., pneumonic outbreak, which began when a squirrel hunter fell ill, all these epidemics have occurred during epizootics in domestic rodents, particularly among rats.[1]

Somewhat less than another 100 cases have appeared as sporadic, widely separated instances in which some association could be shown with wild animals, especially with rodents. During the past twenty-five years, approximately one case per year of this kind has been reported in California, Oregon, Nevada, Idaho and Utah. Since the five New Mexico cases are undoubtedly of wild-animal origin, it is with the epidemiologic aspects of that type of infection that this paper is particularly concerned.[2]

Plague in wild rodents was first suspected in 1903, during the initial San Francisco epidemic, when two human cases were reported in rural Contra Costa County across the bay. An attempt was made then to determine whether squirrels were involved, but no infected animals were found. In 1908, after the second San Francisco epidemic, human cases occurred in Contra Costa and Los Angeles counties and, subsequently, plague-infected squirrels were found in both counties.[3] The search for infected squirrels was extended then to other areas, and during the next two years the infection was found in squirrels in 10 different counties in California.[4]

TABLE 1.—*Year of Discovery of Plague Infection in New Mexico Counties*

County	First Infected	County	First Infected	County	First Infected
Catron	1938	Torrance	1943	Colfax	1949
Dona Ana	1939	Union	1943	McKinley	1949
Valencia	1939	Guadalupe	1948	San Juan	1949
Lincoln	1943	Rio Arriba	1948	Taos	1949
Quay	1943	Socorro	1948	Lea	1950
Sandoval	1943	Bernalillo	1949	Eddy	1950

Human plague attributable to contact with infected wild rodents was limited to California until 1934, when a human case was reported in Lake County, Ore. Infected rodents were found in Oregon in 1935 and successively in the following states: Montana, 1935; Idaho, 1936; Nevada, 1936; Utah, 1936; Wyoming, 1936; Washington, 1937; Arizona, 1938; New Mexico, 1938; Colorado, 1941; North Dakota, 1941; Oklahoma, 1944; Kansas, 1945, and Texas, 1946. Surveys have been conducted in over 600 counties of the 17 westernmost states, and plague has been found nearly 4,000 times in the wild rodents of 132 counties of 15 of these states, South Dakota and Nebraska being the exceptions.[5]

As noted previously, the first positive findings in New Mexico were in 1938. Table 1 gives a list of the counties in that state which are known to have harbored plague-infected wild animals, with the years in which the disease was first proved to exist.[6]

No infection has yet been found in Grant, Hidalgo, Sierra, Luna, Otero, Chaves, De Baca, Curry, Roosevelt, Mora, Harding, San Miguel or Santa Fe counties, although all these have been surveyed on one or more occasions. Plague-infected wild animals have been found in over half the counties of New Mexico and, because plague was present in 11 counties in 1949, it is not surprising that five human cases have occurred during the past 12 months.

This paper is a condensation of nine original articles on the clinical, laboratory and epidemiologic aspects of the five New Mexico cases of human plague prepared by the following authors: James R. Scott, M.D., and C. H. Douthirt, M.D., the New Mexico Department of Public Health, Santa Fe, N. Mex.; Myrtle Greenfield, the New Mexico Public Health Laboratory, Albuquerque, N. Mex.; Ashley Pond, M.D., Albert M. Rosen, M.D., and Ruth L. Nicholson, M.D., the Pond Clinic, Taos, N. Mex.; H. C. Rosenstiel, M.D., N. Balfour Slonim, M.D., and Joseph R. Bateman, M.D., the Veterans Administration Hospital, Albuquerque, N. Mex.; R. E. Whitehead, M.D., and Lawson Fish, the U. S. Marine Hospital, Fort Stanton, N. Mex. Dr. Link is from the Western Communicable Disease Center Laboratory, San Francisco.

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REPORT OF CASES

CASE 1.—A boy residing in Cerro, Taos County, became ill on July 26, 1949. Some four or five days before, the patient and his brother had killed a prairie dog about 150 yards from their home by throwing a rock and hitting it in the head. Presumably the prairie dog was sick, because ordinarily one cannot approach so closely as this to these animals. Curiously enough, the boy who later became ill with plague did not handle the animal, but his younger brother picked up the prairie dog and carried it home. A subsequent investigation disclosed a prairie dog colony about a quarter of a mile from the boys' home which appeared to have been thoroughly depopulated. Not a single live dog was seen, which is characteristic of prairie dog towns attacked by plague. Plague infection was discovered for the first time in Taos County in 1949 in prairie dogs about 20 miles west of Cerro.[7]

CASE 2.—A man who lived at Placitas in Sandoval County became ill almost simultaneously with the patient described in case 1, on July 28, 1949. The patient claimed not to have handled any wild animals prior to falling ill, but he had killed two pocket gophers while irrigating his farm two or three days before the onset of his illness. Plague was first discovered in Sandoval County in 1943 in grasshopper mice about 9 miles west of Placitas. Plague was again found in this county in 1949, in prairie dogs about 50 miles northwest of Placitas.[8]

CASE 3.—The patient, who died on Nov. 5, 1949, was a boy who lived in San Patricio in Lincoln County. He gave no history of contact with wild animals nor could any be obtained from his family. However, a neighbor later reported finding several dead ground squirrels on his farm at about the same time that the boy became ill. The death of these ground squirrels may have been caused by plague. Plague was first found in Lincoln County in 1943 in prairie dogs and was again found in 1948 and 1949 about 40 miles west of San Patricio.[9]

CASE 4.—A man who lived in Maljamar in Lea County went hunting on Jan. 6, 1950, at which time he shot and cleaned five cottontail rabbits. On January 8, symptoms developed which were subsequently proved to be due to plague. Plague had never before been found in the wild animals of Lea County, but a survey crew working in February 1950 uncovered evidence of an active plague epizootic in cottontail rabbits, pack rats and grasshopper mice.[10]

CASE 5.—The patient, who died July 4, 1950, was a boy who lived on a ranch near Glorieta in Santa Fe County. He gave no history of contact with wild animals, although a younger brother had recently trapped a prairie dog. A subsequent epidemiologic investigation at the boy's home disclosed that the prairie dog town was apparently normal, without any evidence of dead animals. This is being subjected to further investigation by a plague survey unit. Plague has never been found in the wild animals of Santa Fe County.[11] Table 2 gives a summary of the clinical findings, laboratory procedures and treatment measures of each of the five cases.[12]

No domestic rodents were observed in the homes or environs where the first three patients resided. However, the town (Maljamar) where the fourth patient lived was rat infested. A February 1950 survey of the rats indicated that they were not involved in the epizootic which was present in the wild animals of the county. An autopsy gave no unusual pathologic results for the rats obtained, and none was infested with ectoparasites of any kind. Presumably, they can be excluded as a possible source of infection for the human case. It must be concluded, therefore, that all five of these cases resulted from contact with wild rodents.

TABLE 2.—*Summary of Clinical Findings, Laboratory Procedures and Treatment*

Case	1	2	3	4	5
Age	9	34	7	27	15
Sex	M	M	M	M	M
County	Taos	Sandoval	Lincoln	Lea	Santa Fe
Onset	7/26/49	7/28/49	11/3/49	1/8/50	7/1/50
Hospitalized	7/29/49	7/30/49	11/5/49	1/13/50	..
Bubo	axillary	inguinal	axillary	axillary	inguinal
Admission white blood cell count	18,400	14,000	19,600	40,500	..
Blood culture	not done	negative 8/1/49	positive 11/5/49	positive 1/13/50	positive*
Bubo aspiration	7/30/49	8/1/49	unsuccessful	1/13/50	not done
a. Smear	positive	positive	positive*	not done	positive*
b. Culture	positive	positive	positive*	positive	positive*
c. Animal inoculation	positive	positive	positive*	positive	positive*
Agglutination					
a. Patient's serum and patient's organism	not done	1:640 8/1/49	not done	1. negative 1/13/50 2. 1:160 1/19/50	negative*
b. Patient's serum and Taos organism	not done	1:160 8/1/49	not done	1:80 1/19/50	negative*
Treatment	penicillin streptomycin sulfadiazine	penicillin aureomycin streptomycin sulfadiazine	penicillin	penicillin aureomycin dihydro-streptomycin sulfadiazine	penicillin
Outcome	recovery	recovery	fatal 11/5/49	recovery	fatal 7/4/50

* Postmortem specimens.

The histories given indicate the probable sources to be prairie dogs, pocket gophers, squirrels, cottontail rabbits and prairie dogs, respectively.

The diagnosis of human plague should be indicated by the clinical picture, supported by the epidemiologic situation and confirmed by laboratory determinations. Plague must be differentiated from adenitis due to tularemia, streptococcic and staphylococcic infections, lymphogranuloma venereum, syphilis and filariasis. Septicemic plague must be differentiated from tularemia, typhus, typhoid, malaria and from the commoner causes of septicemia. Pneumonic plague must be differentiated from other types of pneumonic involvement.

The diagnosis of plague can be confirmed by aspirating the bubo to make smears, cultures and animal inoculations with the fluid obtained. In septicemic cases, blood cultures are easily obtained; in the pneumonic type, the sputum is loaded with plague bacilli.

Treatment with streptomycin and sulfadiazine is the method of choice. One should start such treatment

7. Case history by Drs. Pond, Rosen and Nicholson (unpublished).
8. Case history by Drs. Bateman and Slonim (unpublished).
9. Case history by Dr. Whitehead (unpublished).
10. Case history by Drs. Rosenstiel and Bateman (unpublished).
11. Epidemiologic investigation by Dr. Douthirt (unpublished).
12. Pond, Rosen and Nicholson,[7] Bateman and Slonim,[8] Whitehead,[9] Rosenstiel and Bateman,[10] Douthirt,[11] Laboratory procedures on cases 1, 2, 4, 5 by Miss Greenfield. Laboratory procedures on case 3 by Mr. Fish. All laboratory findings confirmed by the Western Communicable Disease Center Laboratory and the University of California Hooper Foundation.

immediately, without waiting for laboratory confirmation. Streptomycin should be given intramuscularly every four hours until the temperature becomes normal. Individual doses should vary from 0.25 to 1.0 Gm. depending on the severity of the symptoms. Sulfadiazine should be administered orally simultaneously, with an initial dose of 4.0 Gm. followed by 1.5 to 2.0 Gm. every four hours for ten days or two weeks. In very severe cases it may be desirable to give sulfadiazine intravenously.

Mass prophylactic immunization with plague vaccines is not practical in this country because of the small number of cases which occur, as well as the fact that the immunity lasts only for a relatively short time and is not always 100 per cent effective.

COMMENT

Two of the five New Mexico cases occurred in counties (Lea and Santa Fe) in which wild rodent plague had never been found previously. This means that not only the physicians in the 132 western counties known to have foci of wild rodent plague but all the physicians in any of the 15 infected western states should suspect plague whenever axillary or inguinal lymphadenopathy is encountered.

Without exception, all five of the New Mexico cases received penicillin as the first therapeutic measure. In the two fatal cases, penicillin was the only drug employed, and the true diagnosis was not even suspected until after death. Penicillin is a valuable addition to the physician's armamentarium but has no value whatsoever in the treatment of human plague. Streptomycin and sulfadiazine should be given immediately whenever axillary or inguinal lymphadenopathy is present and even when only a possibility exists that the disease is plague. In the first New Mexico case, the almost specific action of these two therapeutic agents produced an immediate, dramatic, life-saving effect in a moribund patient who most certainly would have died without such treatment.

Unless plague is suspected, diagnosed and treated early, sooner or later a case will occur in which a pathologic pulmonary condition will develop and initiate a pneumonic outbreak with a far more serious loss of life than generally occurs from the sporadic occurrence of single bubonic cases.

CONCLUSION

Sporadic cases of plague caused by association with infected wild animals will continue to be observed. It behooves western physicians to regard all cases of inguinal and axillary lymphadenopathy with a high index of suspicion and institute immediate treatment with streptomycin and sulfadiazine. Lives will continue to be lost if these appropriate therapeutic agents are not given early and in adequate quantities. Penicillin is not effective in plague.

Smoker's Larynx.—At first the lesion is purely that of an inflammatory reaction. The earliest change to be noted is a localized edema of part of a vocal cord. Later this edematous area gives way to a well established neoplasm, which histologically is an edematous fibroma. This is the direct result of irritation from smoking.—Mervin C. Myerson, M.D., Smoker's Larynx, *The Annals of Otology, Rhinology & Laryngology*, June 1950.

CARE OF CHILDREN CONVALESCING FROM POLIOMYELITIS

Discussion of Several Points of Controversy

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After the period of virus invasion is over and progressive damage to the central nervous system threatening the child's life is past, the physician is faced with the problem of intelligently handling his young patient while the inflammation in the neuromuscular system quiets down and the remaining anatomically intact neuromuscular units become physiologically available for use. He must be responsible for a logical progression of treatment procedures that will, first, restore the most effective use of all remaining neuromuscular units and, second, minimize all musculoskeletal deformities that might limit the child's ultimate functional capacity. Even in the mildly involved patient (infant or child) this means years of care while the individual increases in height, weight, activity and responsibility. During every day of these years there is the constant threat of progressive weakness through misuse of muscle action and progressive skeletal deformity through excessive or unprotected activity.

Unfortunately, there is no magic drug or electronic machine, no dramatic manipulation of bone and joint that will make the child's muscles strong and his bones straight. But there is an element of magic, an element of drama in the way muscles respond over the years to carefully graduated exercise and in the way skeletal alinement can be maintained or corrected by constant painstaking attention to the details of modified activity, by intelligently applied apparatus and, if necessary, by properly timed orthopedic surgery.

The over-all program is similar in all responsible and experienced medical units caring for patients with poliomyelitis and its after-effects. If the programs are so uniform, why does there exist so much controversy and indecision within each step, and why are end results often so inexcusably poor? The major points of conflict can be narrowed down to four issues: (1) hospitalization; (2) physical therapy; (3) inactivity, activity and apparatus, and (4) surgery. This presentation will best serve its purpose by outlining my thoughts and actions in each issue. The problem of surgical treatment will be considered only as it applies to convalescent care.

HOSPITALIZATION

The period of hospitalization in poliomyelitis will depend on three factors, the amount of involvement, the age of the child and home conditions. A convalescent hospital unit should be used only for the period of time necessary (1) to evaluate accurately the child's involvement, (2) to set into action the basic routines of mobilization and strengthening, (3) to order, fit and begin the use of necessary assistive and supportive apparatus and (4) to instruct the parents thoroughly in home routines of care. The child may be expected to require years of treatment. The great bulk of this treatment must be carried out at home by the child and his parents. Only in severe and unusual problems is there need to hospitalize the child more than three to six months after onset of illness. Special problems such as acute illness, termination of pregnancy and the few weeks post partum when the mother cannot be expected

to adequately care for her child, or when certain changes in housing necessary to continue care of the child at home are being made, may make it advisable to extend hospitalization a few weeks or even several months. Irresponsible parents or extremely poor home conditions are seldom good reasons for long hospitalization. If it is realized that the child's treatment must be continued for many years it should likewise be realized that the parents will still be irresponsible and the housing conditions poor after the child is kept in a hospital for a year or more.

All too frequently (and I speak in the light of my own mistakes) the treatment program keeps the child hospitalized after the acute stage for six, twelve or even eighteen months and then the physician spends fifteen minutes presumably checking the child every three to six months in a crippled children's clinic until the patient is old enough for surgical treatment. It is far better to hospitalize the child for a shorter period initially and to readmit him at regular intervals for short periods of evaluation, specific treatment, fitting and instruction in use of apparatus and reinstruction of parents. It is only when faulty or inadequate care is given that long periods of hospitalization are necessary. I would suggest the basic program outlined in the accompanying table.

Basic Program for Treatment of Children with Poliomyelitis

Involvement *				Hospitalization After Acute Stage	Treatment During Hospitalization	After-Care as Outpatient and at Home
100	N					
	G+	Mild	Infant or child	2 wks.	Mobilization, beginning activity; accurate evaluation; instruction of parents in home routine	Periodic reevaluation of strength, mobility and skeletal alinement until full bone growth has occurred; check and change home routines as indicated
80	G					
70	G—		Infant	6 wks.	Mobilization, muscle reeducation, beginning nonweight-bearing activities; accurate evaluation; instruction of parents in home routines	As above plus gradual restoration of activity within limit of strength
	F+	Moderate				
50	F		Child	3 mo.		
40—	F				As above plus application of apparatus necessary to safely support and assist graduated activity; specific functional training if necessary	As above plus periodic hospitalization for evaluation, specific muscle reeducation and functional training
	P+	Severe	Infant or child	6 mo.		
20	P					
10	P—		Infant	6 wks.	As above; child should be gotten on feet and walking pattern (with brace if necessary) and crutches set before dismissal	As above; periodic return to hospital for specific training as infant grows and scope of action widens
	Tr	Very severe				
0	O		Child	3 mo.		

* The involvement as designated by the percentage or initials refers to the strength of weight-bearing groups of muscles in the involved segments. These symbols are used to denote muscle strength determined by manual muscle tests. (N, G, F, P, Tr and O denote normal, good, fair, poor, trace and zero strength, respectively.)

PHYSICAL THERAPY

There is little doubt that physical therapy should be used and is the method of choice in convalescence after poliomyelitis, but there is much indecision about what type should be used, when it should be started and how long it should be continued. Physical therapy employs such physical agents as heat, massage, exercise, manipulation, water and electricity. Each has a long history of use in medicine and has proved definite and limited physiologic effects on human tissue. The tools should not be criticized for their inadequacy in the hands of poorly trained and unskilled physicians and physical therapists.

In the early phases of convalescence, physical therapy has the great responsibility of helping to relieve pain and to restore and maintain normal mobility of the involved bodily segments. Later, through specific forms of exercise based on fundamental principles of functional anatomy and muscle reeducation, physical therapy assists the patient to use the muscle fibers remaining under his voluntary control with such coordination that, with guided use, effective strength and function are regained.

As the need for certain orthopedic apparatus becomes apparent, physical therapy adapts its routines to include the most efficient and beneficial use of this apparatus. Later, weight-bearing activities are increased through specific and graded patterns of walking, step climbing and all the other functional activities within the limits of present safety and future security.

It is true that these routines are tedious and time consuming, and much indecision and controversy exists as to how long one should continue attempts to coax back strength and function in severely weakened muscles. Much time and money can be wasted by prolonging this phase of muscle reeducation long past the period when any reasonable hope for the return of strength has vanished. On the other hand, muscle reeducation terminated before possible voluntary control has returned and coordinate patterns of movement are set is an equal waste. Here one may be guided, but not ruled, by the usual relationship of recovery of individual muscle strength as related to time. The accompanying chart shows that by the end of three months of adequate care the return of relative muscle strength will amount to about 50 per cent of that finally recovered if treatment is continued over an indefinite period of time. At six months, approximately 75 per cent will have returned; at nine months, 85 per cent, and, finally, after eighteen to twenty-four months, very nearly 100 per cent. This gives one definite and practical guidance when the chart is studied in the light of such extrinsic factors as the age of the child, his medical condition and his general personality.

If it becomes obvious that severe functional handicap will always be present, physical therapy then attempts to instruct the patient in the use of special apparatus to overcome specific functional problems. This requires great ingenuity and patience, and the apparatus must be changed as the child grows and his functional demands change.

INACTIVITY, ACTIVITY AND APPARATUS

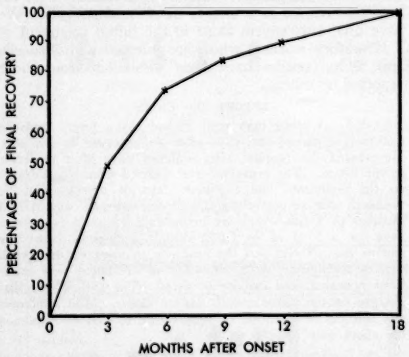
The next points of controversy may be grouped together because of their close relationship: inactivity, activity and the use of apparatus. It may be said that the future of the child with even the mildest after-effects of poliomyelitis lies in the delicate balance of activity against inactivity. Relative inactivity with the proper support of weakened bodily segments is necessary to protect denervated muscle fibers and maintain normal skeletal alinement. Some activity is not only desirable but inevitable in the infant or child, who soon manifests a normal and healthy desire to move about despite muscle weakness.

Musculoskeletal deformities develop from one cause: persistent faulty use of muscle strength and/or persistent faulty skeletal alinement. Equally severe problems arise with faulty bodily mechanics of the patient at rest

as during activity. The proper use of orthopedic apparatus for support, assistance and, if necessary, correction is the only reasonable and practical answer.

Activity, such as turning over in bed, sitting up in bed or in wheelchair and standing and walking, should be started as early as it can be done safely. To be safe, it must be possible without incoordinate or substitute patterns of muscle action and without deforming stress on skeletal and other supportive tissues. In many instances this can be accomplished only through the use of apparatus. Apparatus thus becomes an integral part of the over-all treatment. The intelligent use of apparatus coupled with physical therapy will make it possible for muscles to recover functional strength, with the hope that as strength returns apparatus can be discarded.

In the early stages of convalescence, apparatus must be thought of as a protection permitting safe activity while the basic program of rest and specific muscle reeducation is being carried out. Apparatus may also be used to prevent, minimize or correct deformity. Later, when severe loss of muscle strength is evident, apparatus is used to support and assist activity and to minimize the danger of progressive deformity as the child increases in height, weight and activity.



Relationship of extent of final recovery from disability due to poliomyelitis to time after onset.

SURGERY AS RELATED TO CONVALESCENT CARE

Certain orthopedic surgical procedures may be indicated during the months and years that are commonly considered to be within the period of convalescence. The necessity for these procedures usually arises from the need to reestablish adequate mobility of bodily segments by release of fascial or ligamentous structures when the more conservative methods of manual and mechanical stretching have failed. Unless this mobility is restored only incomplete recovery of muscle power is possible. Persistent overpull of incoordinate or unopposed muscle strength may be an indication for early surgical intervention. Obviously, the continued malpositioning of skeletal structures by contractures or faulty muscle action will produce progressive structural distortion. Therefore, as soon as the factors contributing to malalinement are recognized as irreversible to conservative measures but capable of partial or complete correction by orthopedic surgery, that type of surgical intervention should be given thoughtful consideration.

SUMMARY

The four major points of controversy relative to convalescent care have been briefly discussed. These points are: (1) hospitalization; (2) physical therapy; (3) inactivity, activity and use of apparatus, and (4) surgery.

THORN TEST IN PATIENTS WITH EOSINOPHILIA RELATED TO PARASITIC INFECTION

Preliminary Report

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The extensive studies on the physiologic and clinical behavior of purified pituitary adrenocorticotropic hormone (ACTH) have made it necessary to develop laboratory procedures which may enable the clinician and investigator to make a safe interpretation of the response of the adrenal cortex to the exogenous pituitary factor. Thorn and his associates [1] used as a criterion of adrenocortical function, the fall of circulating eosinophils and lymphocytes and the increase in urinary excretion of uric acid expressed as a change in uric acid-creatinine ratio. These changes occur when an intact adrenal cortex is stimulated by the injection of 25 mg. of purified ACTH.

In subsequent studies the same group of investigators [2] has eliminated the determinations of uric acid and creatinine from their procedures. Obviously other factors, like impaired renal functions, may introduce a source of error in such tests.

Even though there is conclusive evidence to show that the number of circulating lymphocytes is dependent on the 11-oxysteroids of the adrenal cortex,[3] the fact that the release of lymphocytes into the blood stream is so variable may make the magnitude of a hormonally induced lymphopenia less definite at any given time than a similarly produced eosinopenia. Therefore, it seems that the change in number of circulating eosinophils is the most reliable of the three methods.

Since the incidence of parasitic infestations is so high in the tropics, we wished to test whether the measurement of eosinophils as an index of adrenal cortex activity would be complicated by the eosinophilia of persons suffering from those diseases.

MATERIALS AND METHODS

In order to perform the Thorn test we had to use the modified technic [4] which is based on Long's experiments [5] in which he discovered that epinephrine stimu-

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1. Forsham, P. H.; Thorn, G. W.; Prunty, F. T. G., and Hills, A. G.: Clinical Studies with Pituitary Adrenocorticotropin, J. Clin. Endocrinol. **8**: 15, 1948.
2. Thorn, G. W.; Forsham, P. H.; Recant, L., and Hills, A. G.: The Use of Adrenocorticotropin as a Test of Adrenal Cortical Reserve, J. Clin. Endocrinol. **8**: 589, 1948.
3. Dougherty, T. F., and White, A.: Influence of Hormones on Lymphoid Tissue Structure and Function: Role of Pituitary Adrenotropic Hormone in Regulation of Lymphocytes and Other Cellular Elements of Blood, Endocrinology **35**: 1, 1944.
4. Recant, L.; Forsham, P. H., and Thorn, G. W.: Observations on the Pituitary-Adrenal Response Following Epinephrine Infusion in Man, abstracted, J. Clin. Endocrinol. **8**: 589, 1948.
5. Long, C. N. H.: Conditions Associated with Secretion of Adrenal Cortex, Federation Proc. **6**: 641, 1947.

lates the discharge of adrenocorticotropic hormone by the anterior lobe of the pituitary gland. We had to use this modification because ACTH was not available for our studies. We intend to make observations on another series of patients as soon as this hormone can be obtained.

An initial eosinophil count was done with use of a modification of Randolph's stain.[6] Immediately, 0.3 mg. of epinephrine was administered subcutaneously. Four hours later another eosinophil count was performed.

The patient had confirmed diagnoses of filariasis or bilharziasis, and they either had had no treatment or were not under any medication for the last two months. Bed rest was instituted during the four hour test period, and no other food than a light breakfast was allowed.

RESULTS

The effect of the epinephrine injection on the circulating eosinophils is shown in the accompanying table.

Effect of Epinephrine Injection on Circulating Eosinophils

Case	Sex	Age	Diagnosis	Eosinophils/Cu. Mm. of Blood		
				Initial Count	Count 4 Hr. After	% Decrease
1	M	39	Filariasis	488	266	46
2	M	19	Filariasis	1,465	587	60
3	M	25	Filariasis	688	222	68
4	M	20	Filariasis	333	177	47
5	F	68	Filariasis	377	244	30
6	M	21	Filariasis	1,398	744	47
7	F	24	Bilharziasis	2,641	1,043	61
8	F	19	Bilharziasis	2,242	799	70
9	M	36	Bilharziasis	688	555	17
10	M	36	Bilharziasis	900	488	46
11	F	27	Bilharziasis	799	466	42
12	M	39	Filariasis	431	199	54

COMMENT

In our series of patients the adrenal cortex did not seem deficient, with the exception of 2 patients (cases 5 and 9) in whom the administration of epinephrine did not result in a considerable decrease of eosinophils in the blood. The fact that in some persons the pituitary gland may not respond enough to the amount of epinephrine injected cannot be ruled out, although this reasoning is a mere speculation. It will be explained best when the experiment is repeated and ACTH is used, to be certain that the stimulus is applied directly to the adrenal glands.

The presence of a high eosinophil count in patients suffering from parasitic diseases cannot be attributed to the subnormal function of the adrenal glands; at least the production of 11-oxysteroids which regulate the blood elements, namely lymphocytes and eosinophils, seems to be normal in these patients.

Apparently the parasitic eosinophilia would not complicate the Thorn test for adrenal insufficiency in most cases. It is highly desirable to repeat our observations when we can use exogenous adrenocorticotropic hormone to stimulate the adrenal glands.

SUMMARY AND CONCLUSION

Use of the Thorn test for adrenal insufficiency, using epinephrine to detect the changes in circulating eosinophils in human patients with filariasis and bilharziasis, has been reported.

In 10 of 12 persons the number of eosinophils decreased over 40 per cent after a four hour rest period after the injection of 0.3 mg. of epinephrine. This result may indicate that parasitic infections may not interfere with such a test for adrenocortical function. A future communication will deal with a similar study in which pituitary adrenocorticotropic hormone (ACTH) will be used instead of the adrenergic drug.

6. Roche, M.; Thorn, G. W., and Hills, A. G.: The Levels of Circulating Eosinophils and Their Response to ACTH in Surgery, New England J. Med. **242**: 307, 1950.

FAILURES WITH AUREOMYCIN IN THE TREATMENT OF INFECTION WITH BRUCELLA SUIS

A Report of Three Cases

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Aureomycin has been reported to be effective in the treatment of acute brucellosis. Spink and associates [1] noted a dramatic therapeutic effect in 24 patients acutely ill with brucellosis (var. melitensis). Four relapses occurred in this group. Others [2] have recently reported favorable results in a smaller number of patients. We have used aureomycin alone in the initial treatment of 3 laboratory workers who were infected with Brucella suis. Our results have been dissimilar from those reported by others.

REPORT OF CASES

CASE 1.—A white man aged 28 had chills, fever, headache and malaise twenty-one days after an exposure to Br. suis. He entered the hospital after eighteen days of a moderate febrile illness. The organism was obtained from blood drawn on the eighteenth and twentieth days of illness. On the twentieth day aureomycin hydrochloride therapy was started in doses of 1 Gm. every six hours and continued for twelve days for a total of 48 Gm. Within forty-eight hours the patient was afebrile, and the headache subsided on the fourth day of treatment. After cessation of treatment low grade fever appeared, and malaise persisted. The patient was discharged on the thirty-seventh day of illness. Mild symptoms and episodes of elevation of temperature to 99.4 F. continued for about four months.

CASE 2.—This patient was a white man aged 38, who had fever, malaise, cough and headache thirty days after an exposure to Br. suis. He entered the hospital on the fourth day of illness. A roentgenogram of the chest showed a single area of increased density in the lower lobe of the right lung, and Diplococcus pneumoniae, type 29, was recovered from the sputum by mouse inoculation. Treatment with penicillin, 50,000 units every three hours, was started on the second hospital day (sixth day of illness) and discontinued after four days because of the lack of clinical improvement.

On the ninth day of illness a rising Brucella agglutination titer was demonstrated, and on the basis of a presumptive diagnosis of brucellosis, aureomycin hydrochloride, 1 Gm. every six hours, was given. Within forty-eight hours there was an impressive regression of symptoms and fever, and after seventy-two hours the patient was afebrile. Aureomycin therapy was continued for ten days. A total of 40 Gm. was given. Blood cultures taken on the fourth, fifth and tenth day of illness were positive for Br. suis.

From the Biological Department, Chemical Corps, Camp Detrick, Md.

1. Spink, W. W.; Braude, A. I.; Castaneda, M. R., and Sylva-Goytia, R.: Aureomycin Therapy in Human Brucellosis, Due to Brucella Melitensis, J. A. M. A. **138**: 1145 (Dec. 18) 1948.

2. Bryer, M. S.; Schoenbach, E. B.; Wood, R. M., and Long, P. H.: The Treatment of Acute Brucellosis with Aureomycin, Bull. Johns Hopkins Hosp. **85**: 444, 1949. Knight, V.; Ruiz-Sanchez, F.; Ruiz-Sanchez, A., and McDermott, W.: Aureomycin in Typhus and Brucellosis, Am. J. Med. **6**: 407, 1949.

The patient was discharged on the twenty-third day of illness, and he remained in bed at home for seven days. Temperatures as high as 99.8 F. were noted, and malaise persisted. From the thirtieth to thirty-eighth day the patient was ambulatory. Because there was no acute exacerbation of fever or symptoms, he was allowed to return to limited work on the thirty-ninth day. On this day a fever of 102.2 F. developed, and the patient was readmitted to the hospital on the fortieth day.

The subjective complaints on admission were minimal and consisted of malaise and nasal congestion. The physical examination revealed normal conditions, and when the fever subsided after four days the patient was discharged.

Four days after discharge a low grade fever reappeared and was present daily until the fifty-first day of illness, when he had an acute febrile relapse with chills and fever. A Br. suis bacteremia was demonstrated. Treatment with aureomycin hydrochloride, 1 Gm. every six hours, was started on the fifty-fourth day of illness. The response to therapy appeared favorable, in that the patient was afebrile within forty-eight hours

CASE 3.—A man aged 26 was admitted to the hospital on the fourteenth day of illness with chills, fever, headache and "indigestion." During the two weeks prior to hospitalization he had minor complaints consisting of headache, lack of energy, loss of appetite and dull aching in the midepigastrium and chest. Physical examination at the time of admission revealed only a temperature of 102.2 F. and moderate tenderness to palpation in the right upper quadrant of the abdomen. The patient was kept in bed and within five days was afebrile and asymptomatic. He was allowed to leave the hospital on the twenty-second day of illness, after being afebrile for four days. He soon noted the return of malaise, headache and abdominal pain, and within forty-eight hours he had chills and fever. At this time a rise in the Brucella agglutination to 1:400 was demonstrated. Blood cultures taken on the twenty-first and twenty-fourth days of illness were positive for Br. suis.

Treatment with aureomycin hydrochloride, 4 Gm. every six hours, was started on the twenty-sixth day. Because of nausea and gastric irritation the six hour dose was reduced after

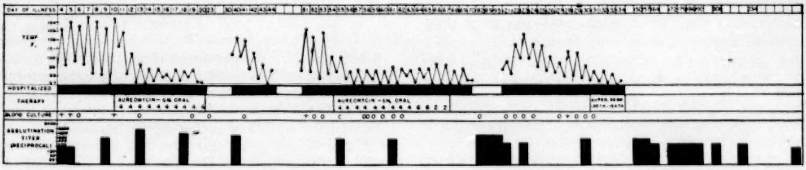

Fig. 1 (case 2).—Acute brucellosis; relapses following two courses of aureomycin hydrochloride.

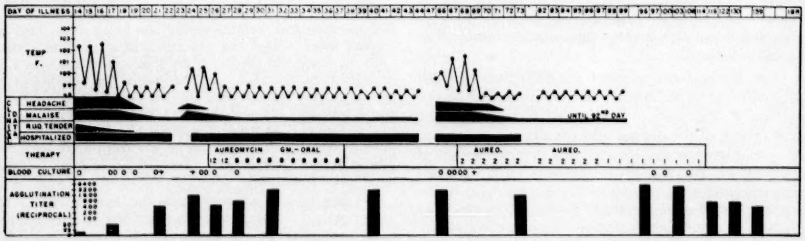

Fig. 2 (case 3).—Acute brucellosis; relapse following treatment with 104 Gm. of aureomycin hydrochloride.

and felt much improved in ninety-six hours. A total of 62 Gm. of aureomycin hydrochloride was given during the thirteen day period of therapy.

The patient was discharged on the seventieth day of illness. Although he was afebrile, he complained constantly of malaise and excessive fatigability. On the one hundred and twenty-first day of illness he relapsed and was readmitted to the hospital. His temperature ranged from 100 to 103 F., and Br. suis was again recovered by blood culture. In view of the fact that relapse had followed the two previous courses of aureomycin, it was decided to give smaller doses of the drug over a prolonged period of time. Therefore 2 Gm. was given daily in four divided doses for fourteen days, after which a total of 1 Gm. daily was given for ten additional days, when the drug was discontinued by mistake. During and after this course of therapy the patient improved slowly. During his convalescence he experienced a two day recrudescence of fever and symptoms. He was considered fully recovered on the one hundred and ninety-fourth day of illness, inasmuch as he had returned to his regular duties. Although there have been no acute relapses in the four month period of observation, he has complained of the persistence of excessive fatigability. A graphic summary of this case is shown in figure 1.

forty-eight hours to 3 Gm. This schedule was continued for ten days. A total of 104 Gm. was given in twelve days. A magnesium trisilicate-aluminum hydroxide mixture, 4 cc. every six hours, was given beginning on the fourth day. The patient was afebrile on the second day of therapy and remained so when discharged on the forty-fifth day of illness.

Soon after he returned home frontal headache, malaise and low grade fever appeared and persisted for twenty-one days. The patient then had an acute relapse and was readmitted to the hospital. Treatment with suppressive doses of aureomycin hydrochloride, 0.5 Gm. every six hours, was started on the sixty-eighth day of illness. Br. suis was recovered from the blood on the sixty-ninth day. The patient was afebrile on the seventieth day and was discharged on the seventy-third day. Aureomycin therapy was continued in the same dosage until the eighty-eighth day, when the dose was reduced to 1 Gm. daily for twenty-seven days. Although the patient was afebrile during the entire period of treatment, he had a recrudescence of symptoms of joint aches and extreme fatigue on the eighty-seventh day of illness. He was considered well on the ninety-second day of illness and has had no relapses in five months of observation.

The course of this patient's illness is shown in figure 2.

COMMENT

The course of the illnesses in these cases of acute brucellosis due to Br. suis indicates that although aureomycin seemed to exert a temporary suppressive effect it was of little or no value in preventing relapses. Patients 2 and 3 both had clinical and bacteremic relapses after receiving large amounts of aureomycin. Patient 1 must also be considered a therapeutic failure in that he had a persistent low grade fever and was chronically ill for a total of five months.

The evaluation of the effectiveness of therapeutic agents in acute brucellosis in man is extremely difficult because of the nature of the disease. Since the variation in the behavior of the disease is influenced by the particular strain of organism involved as well as by unknown factors concerned with the host reaction, the observations here must be interpreted as reservedly as the many more favorable reports. However, our results are sufficiently clear to show that relapses after treatment with aureomycin may be frequent.

The failure of aureomycin to exert a more pronounced beneficial effect was not due to increased resistance of the organism. Data indicate that the strains isolated from these patients before and after treatment were equally sensitive.

We do not believe that the lack of permanent therapeutic effect is caused by the number of bacteria involved in the exposure. Although there are no accurate data on the number of Br. suis to which farmers, veterinarians and meat handlers may be subjected, we believe that it is much greater than that encountered in these laboratories.

A more likely explanation of the discrepancy of our results with the other reports may be found in a consideration of the mode of action of aureomycin, the natural course of the disease and the time of treatment. There are adequate data to indicate that the action of aureomycin on Brucella organisms in vivo is bacteriostatic rather than bactericidal.[3] It is also well established that in human brucellosis the patient is likely to experience several relapses before complete recovery, suggesting that early in the disease the immune mechanisms are relatively ineffective. Thus it is apparent that early treatment with an inhibitory agent merely suppresses the growth of the Brucella in vivo and that when therapy is discontinued relapse occurs because of the slow development of the defense mechanisms.

SUMMARY

Three patients with acute brucellosis were treated with large amounts of aureomycin. Initial treatment with 104 Gm. of aureomycin hydrochloride in 1 patient and with 40 Gm. in another did not prevent clinical relapses with bacteremia. The third patient was also considered to be a therapeutic failure because of persistence of fever and symptoms for months after treatment with aureomycin.

Further critical and well controlled clinical studies must be made before the exact value of aureomycin in the treatment of human brucellosis can be determined.

3. Yow, E. M., and Spink, W. W.: Experimental Studies on the Action of Streptomycin, Aureomycin, and Chloromycetin on Brucella, J. Clin. Investigation **28**:871, 1949. Carle, B. N.: Chemotherapy of Brucellosis in Experimental Animals, in Symposium on Brucellosis, National Institutes of Health, Bethesda, Md., Sept. 22-23, 1949.

Clinical Notes, Suggestions and New Instruments

INTRA-ARTERIAL TRANSFUSIONS IN HEMORRHAGIC EMERGENCIES

Complete Recovery Following Massive Pulmonary Artery Hemorrhage

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Intra-arterial transfusion has recently acquired a significant place in the medical literature. The following case report is one involving cessation of respiration and cardiac action following massive hemorrhage and the application of successful resuscitative measures. It may also emphasize the importance of having means for intra-arterial transfusion set up as standard equipment in the operating room and the delivery room.

REPORT OF CASE

A man aged 27, a slightly obese Puerto Rican, had pulmonary tuberculosis since August 1946. A roentgenogram revealed that the right lung was functionless and the left lung overexpanded but otherwise normal.

Preoperative laboratory studies showed normal blood count, bleeding time and coagulation time and normal urine. The serum protein level was 8 Gm. per 100 cc. The blood urea nitrogen determination was 17 mg. per 100 cc.

Right pneumonectomy was performed on May 20, 1949 with the patient under cyclopropane-ether anesthesia administered through an oral endotracheal cuffed tube. The surgical operation and anesthesia were uneventful and lasted about three and one-half hours. Blood loss was estimated to be about 1,500 to 2,000 cc., which was adequately replaced by transfusion of 1,800 cc. during the operation. At the end of the pneumonectomy the patient was turned from the left lateral decubitus to the supine position. He was extubated, and suction bronchoscopy was performed. As the bronchoscope was being removed, the patient's respirations ceased and he was noted to be extremely pale with a slightly grayish color. Pulse or blood pressure could not be obtained. This episode started at 4:21 p. m.

The surgeon was summoned from the dressing room. The patient was re-intubated and given artificial respiration with oxygen and placed in a 15 degree Trendelenberg position. The intravenous transfusion was accelerated by applying air pressure. The surgeon opened the catheter drain in the right side of the chest, and fresh blood was freely aspirated. The patient was immediately turned on the left side, and at 4:25 p. m. the chest was reopened. In one-half minute large amounts of fresh blood and clots estimated at 2,000 to 2,500 cc. were evacuated from the thorax. The silk ligature on the pulmonary artery was found to have cut through the wall of the vessel. The artery was quickly clamped. The heart was at a complete standstill, and cardiac massage was instituted at once. Within two minutes cardiac action was resumed and was apparently normal. At this time, the patient was completely flaccid and his pupils were widely dilated, regular and nonresponsive to light.

While preparations were made to start an intra-arterial transfusion, about 1,200 cc. of blood was administered intravenously without improvement. The intra-arterial transfusion was started in the left radial artery 24 minutes after the episode began. When the artery was incised only a slow ooze of oxygenated blood was noted. Almost instantly after intra-arterial transfusion was started, the blood pressure and pulse were obtainable

From the Halloran Veterans Administration Hospital.
Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are a result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

for the first time. The blood flow was adjusted by means of a pressure-suction machine connected with the air vent of a Baxter blood bottle, and blood pressure was maintained at approximately 105/70. The pulse rate at this time was 156 per minute. The surgeon then proceeded to secure the vessel and close the chest.

At 5:24 p. m. the patient was returned to the supine position. Slight tremors were present. His extremities were spastic on the right and flaccid on the left. Ankle clonus was exhibited on the right. Painful stimuli applied to the head, trunk and extremities on the right side resulted in movement by the patient, but the same stimuli on the left elicited no response. The rectal temperature was 98 F.

At 5:35 p. m. the pupils started to constrict, and respirations were spontaneous and of a normal pattern. During blood replacement 1,000 cc. of blood that was not cross matched had been used. At 5:48 p. m. and at 7:30 p. m. the patient was catheterized, and 400 cc. of grossly normal urine was obtained each time. At 6:00 p. m. the blood pressure was 110/70. The intra-arterial transfusion was discontinued, but intravenous transfusion was maintained. Immediately the blood pressure dropped to 80/60, and only after one-half hour did it return to 100/60. During the patient's stay in the operating room he was given a total of 5,000 cc. of blood; 1,200 cc. of this had been given intra-arterially. The rectal temperature at 6:15 p. m. was 99 F. and at 8:00 p. m. 102 F.

All abnormal neurologic signs gradually disappeared, and at 8:05 p. m., three and three-quarter hours after the onset, the patient responded to verbal instructions. He was extubated and found to be well oriented. On his return to the ward, his blood pressure was 120/80 and his pulse rate 120 per minute. He spoke coherently with his wife. His temperature rose to 103.6 F. at midnight, but it gradually fell to normal on the third postoperative day.

On the first day after the operation, the urine had a specific gravity of 1.033, few granular casts and 2 to 4 white blood cells per high power field, and it was loaded with bacteria. The blood urea nitrogen level was 33 mg. per 100 cc. The red blood cell count was 4,800,000 and the hematocrit 47 per cent; the total protein was 6.4 per cent. On the third postoperative day the red blood count was 3,190,000, hemoglobin 9.5 Gm. and white blood count 16,100 with 91 per cent neutrophils; the hematocrit reading was 30 per cent. The urine was completely negative. By the sixteenth postoperative day the blood count had returned to normal and the blood urea nitrogen level was 11 mg. per 100 cc. Postoperative chest roentgenograms showed no signs of spread of the tubercular process. His course was uneventful, and one month later he had a post-pneumonectomy thoracoplasty without sequelae. On June 29, 1949 the patient was given a battery of psychologic tests to determine the presence of any residual brain damage. There were no gross abnormalities suggestive of organic brain damage.

COMMENT

This case is of unusual interest for many reasons. These include the exceptionally massive extent and rapidity of the hemorrhage and the demonstration of what can be done if little time is wasted on useless procedures. The maintenance of respiratory exchange, cardiac stimulation, control of hemorrhage with blood replacement and team work were the essential features employed. It is apparent that from the moment the artery opened, little blood was pushed through the left pulmonary vascular bed with its peripheral resistance in preference to the ready exit of blood through the open artery. Therefore, from the moment the hemorrhage started the return of blood to the left side of the heart and hence to the peripheral and coronary circulations was nil. No other type of hemorrhage except aortic could produce this instantaneous cessation of coronary and cerebral circulation.

Cardiac standstill in this case was of a different nature from that usually encountered during surgery and anesthesia, as it was probably not of intrinsic cardiac origin. It was probably related to the sudden deficiency of cardiac filling, which serves as an influence to the force of cardiac contraction. It does not seem likely that deficient coronary circulation of the duration seen here would cause a total cardiac standstill. In such a case one would expect abnormal rather than no cardiac action. The early response of the heart to massage with a normal type of beat, despite the persisting deficiency of circulating blood, is further evidence of the absence of an intrinsic basis for the standstill.

There are several features which speak for the gravity of the situation. The actual effect of the operative procedure cannot be measured. The extent of the hemorrhage was obviously severe. The lack of response to Trendelenberg position, intravenous transfusion of 1,200 cc. of blood within 20 minutes and manual assistance of the cardiac impulse demonstrated the severity of the shock. The poverty of circulation even after 20 minutes of treatment was shown by the presence of only a slow ooze of oxygenated blood from the radial artery when it was incised. This points out another interesting feature. Although circulation was absent for at least four and one-half minutes and extremely poor for the following 20 minutes, this poor but well oxygenated circulation was sufficient to protect the brain from severe damage. The depressant effect of anesthetic agents on cerebral metabolism and oxygen demand probably played some protective role.

The effects of hypoxia in this patient were exceedingly interesting. The pronounced neurologic changes and bizarre patterns during recovery indicated the extensive neurologic injury, which, however, was reversible. Several authors[1] have stressed the factors influencing the amount of brain damage resulting from periods of hypoxia. These are the degree of hypoxia, the duration of this state, the physical status of the patient and his age. In this case the patient's age was much in his favor. The duration of the circulatory arrest was close to the safe maximum given by several recent reports.[2] The period of severe hypoxia due to the unusually small amount of circulating fluid after the reinstitution of circulation was an added insult. However, this period would have been much longer if the patient had received blood replacement by the conventional intravenous route. The intra-arterial transfusion resulted in an immediate cessation of the hypoxic period.

The lapse of time before the intra-arterial transfusion was started was unfortunate. It was due to technical difficulties with the procedure in this stage of shock and because suitable cannulae were not immediately available. Attempts to cannulate the artery with a sharp needle only resulted in the needle piercing the wall during the placement of the needle or almost immediately thereafter. The response of the blood pressure and pulse to the intra-arterial transfusion was almost instantaneous. It was produced by a relatively small amount of blood. This was gratifying, as a lack of response despite the introduction of several hundred cubic centimeters of blood would have indicated the presence of an irreversibly paralyzed peripheral vascular bed without peripheral resistance, that is, a state of irreversible shock.

SUMMARY

A case of complete recovery from massive pulmonary artery hemorrhage following pneumonectomy has been reported. Emphasis has been placed on the importance of immediate and wisely directed treatment in this as in any resuscitative emergency. Intra-arterial transfusion played an essential part in the treatment and probably was responsible for the completeness of the patient's recovery. Its importance and usefulness warrants having means for intra-arterial transfusion set up as standard equipment in the operating room and the delivery room for immediate use.

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PLASTIC RECONSTRUCTION OF PENILE SKIN: IMPLANTATION OF THE PENIS INTO THE SCROTUM

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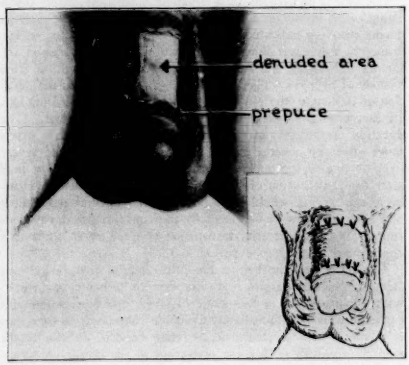
Complete loss of the skin of the penis is a terrifying and troublesome accident to the patient and to the surgeon who may care for him. The chief causes are traumatic avulsion [1] and local tissue necrosis [2] either secondary to urinary extravasation or to slough following local anesthesia. Most authors, in describing treatment of these cases, have advocated split-thickness skin grafts to cover the defect. A few [3] have used the principle described here of embedding the denuded penis in the scrotum and later lifting it from its bed surrounded with scrotal skin. This same principle has been employed by Banham,[1d] who implanted the penis in the thigh. A careful review of the literature was presented by Owens in 1942 [1b]; the most recent report is that of Ferris in 1949.[4] A recent experience in which a denuded penis was successfully and easily treated by scrotal implantation even in the presence of rather severe infection prompts this report.



Extent of penile denudation and (insert) area of implantation.

REPORT OF CASE

C. S., a Negro aged 52, a janitor, was admitted to the urologic service by way of the accident room on Oct. 28, 1948, because of an abscess of the penis, secondary to urethral stricture and urinary extravasation. The student's admission note graphically describes the situation: "The penis was decidedly swollen and edematous. There was necrosis of the skin over the distal two thirds on the dorsal surface and over the distal one third ventrally. This necrotic skin was split open in several places; a white, thick, foul material oozed from it. The patient had not been circumcised, and the prepuce was edematous and necrotic. The penis could be moved about and examined without much pain to the patient, which was remarkable from the way it appeared. The diameter of the penis was estimated as at least 6 cm."

The patient was taken immediately to the operating room, where, after cystostomy and diversion of the urine, the abscess was incised and widely drained through the perineum, scrotum and inguinal regions. The abscess was subcutaneous, outside Buck's fascia, and extended from the corona downward almost to the urogenital diaphragm. The necrotic skin covering the shaft of the penis was excised, leaving a stump of apparently healthy prepuce and a bare penile shaft. The wound was packed with iodoform gauze, and the patient was returned to the ward, where he received streptomycin and penicillin.

In less than two weeks of antibiotic therapy and saline compresses the area of the slough appeared healthy, although still grossly infected and purulent. At first a split-thickness skin graft was contemplated, but because of infection this procedure was abandoned in favor of scrotal implantation.

On November 10 the urethra was dilated and the penis was buried in the scrotum by the simple method of making two transverse slits and tunneling between them. The scrotum was drained. The drawing (fig. 1) indicates the extent of denudation, and the insert shows the area of implantation. The wound healed quickly in spite of the infection, and the patient was discharged on November 18, with the penis firmly and safely incarcerated in the scrotum. In retrospect it seems probable that the first emergency operation and the second implantation operation might have been combined in this case, even in the presence of severe infection, if adequate scrotal drainage had been provided.

The patient was readmitted Jan. 20, 1949, and in several operative steps the penis was lifted from its bed in the scrotum. This procedure was troublesome and prolonged because of scrotal edema and poor healing. The final stage of resurrection was accomplished during a third admission in June, 1949.

The patient states that he has normal erections. It is interesting that the cremasteric reflex is still present and includes a portion of the redundant scrotal skin which now covers his penis.

SUMMARY

Scrotal skin is an easily available and practical covering for defects in the skin of the penis. The penis may be implanted into the scrotum even in the presence of infection or a potentially dirty wound. Later resurrection of the penis from the scrotal bed is not difficult, though it may be time consuming as the result of scrotal edema and poor healing. A case demonstrating these facts is reported.

Scrotal implantation is one of the simplest and most practical ways of dealing with the problem of denudation of the penis.

From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

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Blood Iodine.—Recent improvements in micro-technic have so simplified the determination of the fractionated blood iodine that this procedure is generally applicable clinically. Moreover, it is practical and is now ready for inclusion into the facilities of all well established clinical laboratories. Although the results obtained from the many different methods in use may not be significantly compared to each other, any one of several methods yields results which, when compared to others from the same method, are significant both in research and to the clinician. . . .

Normal values for the blood iodine should be established for each local area and for the technic used. It is unlikely that sex, season or age influence blood iodine values. The blood iodine rises during pregnancy, but reports on the effects of menstruation, food intake and exercise are in disagreement. . . .

Although the diagnosis of thyroid disorder cannot be made by determination of the fractionated blood iodine alone, this procedure has proved to be a most valuable adjunct in the diagnosis, management and prognosis of thyroid disease. It should be utilized by the clinician with the same frequency as other common laboratory aids.—Richard L. Rapport, M.D., and George M. Curtis, M.D., Clinical Significance of the Blood Iodine: A Review, *Journal of Clinical Endocrinology*, July 1950.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

PENICILLIN FOR ORAL ADMINISTRATION (See New and Nonofficial Remedies 1950, page 139).

The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Dulcet Tablets Crystalline Potassium Penicillin G (Buffered): 100,000 units. Buffered with 0.25 Gm. calcium carbonate.

Tablets Crystalline Potassium Penicillin G (Buffered): 250,000 and 500,000 units. Buffered with 0.5 Gm. calcium carbonate.

PARKE, DAVIS & CO., DETROIT

Tablets Crystalline Potassium Penicillin G (Buffered): 50,000 and 100,000 units. Buffered with 0.25 Gm. of calcium carbonate.

PREMO PHARMACEUTICAL LABORATORIES, SOUTH HACKENSACK, N. J.

Nebutabs Crystalline Potassium Penicillin G: 50,000 and 100,000 units.

E. R. SQUIBB AND SONS, NEW YORK

Foil-Tabs Crystalline Potassium Penicillin G (Buffered): 50,000, 100,000 and 250,000 units. Buffered with 0.34 Gm. of calcium carbonate.

Soluble Foil-Tabs Crystalline Potassium Penicillin G: 50,000 and 100,000 units.

PENICILLIN FOR PARENTERAL USE IN AQUEOUS SOLUTION (See New and Nonofficial Remedies 1950, page 141).

The following dosage forms have been accepted:

PARKE, DAVIS & COMPANY, DETROIT

Crystalline Potassium Penicillin G: Vials of 100,000, 200,000, 500,000 and 1,000,000 units.

PREMO PHARMACEUTICAL LABORATORIES, SOUTH HACKENSACK, N. J.

Crystalline Procaine Penicillin G: Vials of 300,000, 1,500,000 and 3,000,000 units.

STRONG COBB AND CO., CLEVELAND

Aqueous Suspension Procaine Penicillin G: 1 cc. ampins®: 300,000 units in each cc. Preserved with 0.18 per cent methylparaben and 0.02 per cent propylparaben.

PENICILLIN FOR PARENTERAL USE FOR PROLONGED ACTION (See New and Nonofficial Remedies 1950, page 144).

The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Aqueous Suspension Crystalline Procaine Penicillin G (Buffered): 1 cc. cartridges with disposable cartridge syringe, 1 cc., 5 cc. and 10 cc. vials: 300,000 units in each cc. Preserved with 1.35 mg. of methylparaben and 0.15 mg. of propylparaben. Buffered with 12.6 mg. of sodium citrate.

STRONG COBB AND CO., INC., CLEVELAND

Crystalline Procaine-Potassium Penicillin G in Oil: 1 cc. ampins®: 300,000 units crystalline procaine and 100,000 units crystalline potassium in each cc. of peanut oil with 2 per cent aluminum monostearate.

DIGITOXIN (See New and Nonofficial Remedies 1950, page 230).

The following dosage form has been accepted:

THE BLUE LINE CHEMICAL COMPANY, ST. LOUIS

Tablets Digitoxin: 0.1 and 0.2 mg.

RABIES VACCINE (See New and Nonofficial Remedies 1950, page 431).

The following dosage form has been accepted:

PARKE, DAVIS & COMPANY, DETROIT

Iradogen Rabies Vaccine: 1 cc. vials packaged in units of seven and fourteen vials of a 10 per cent suspension. Preserved with thimerosal 1:10,000.

U. S. Patent 2,421,382.

SODIUM IODOMETHAMATE (See New and Nonofficial Remedies 1950, page 270).

The following dosage form has been accepted:

SCHERING CORPORATION, BLOOMFIELD, N. J.

Solution Neo-Iopax 50%: 30 cc. ampuls: A solution containing 0.5 Gm. of sodium iodomethamate in each cc.

STARCH-DERIVATIVE DUSTING POWDER (See New and Nonofficial Remedies 1950, page 386).

The following dosage form has been accepted:

ETHICON SUTURE LABORATORIES, INC., NEW BRUNSWICK, N. J.

Powder Bio-Sorb: 2 Gm. packets.

STREPTOMYCIN (See New and Nonofficial Remedies 1950, page 360).

The following dosage form has been accepted:

BIO-RAMO DRUG COMPANY, BALTIMORE

Streptomycin Sulfate: In vials containing streptomycin sulfate equivalent in activity to 1 Gm. and 5 Gm. of streptomycin base.

TESTOSTERONE PROPIONATE (See New and Nonofficial Remedies 1950, page 360).

The following dosage form has been accepted:

GOLD LEAF PHARMACAL COMPANY, NEW ROCHELLE, N. Y.

Solution Testosterone Propionate in Oil: 1 cc. ampuls and 10 cc. vials: A solution containing 10 mg. of testosterone propionate in each cc. of sesame oil; 1 cc. ampuls, 10 cc. and 30 cc. vials: A solution containing 25 mg. of testosterone propionate in each cc. of sesame oil; 10 cc. and 30 cc. vials: A solution containing 50 mg. of testosterone propionate in each cc. of sesame oil.

SODIUM ASCORBATE INJECTION (See New and Nonofficial Remedies 1950, page 472).

The following dosage forms have been accepted:

CARLO ERBA INC., NEW YORK

Solution Sodium Ascorbate with Benzyl Alcohol 1%: 2 cc. ampuls: A sterile aqueous solution containing an equivalent of 50 mg. of ascorbic acid as sodium ascorbate in each cc.; 5 cc. ampuls: A sterile aqueous solution containing an equivalent of 0.1 Gm. of ascorbic acid as sodium ascorbate in each cc.

TESTAGAR AND CO., INC., DETROIT

Solution Sodium Ascorbate: 2 cc. ampuls: A sterile aqueous solution containing an equivalent of 50 mg. of ascorbic acid as sodium ascorbate in each cc. Preserved with 0.18 per cent methylparaben and 0.02 per cent propylparaben.

BENZYL BENZOATE-CHLOROPHENOTHANE-ETHYL AMINOBENZOATE (See New and Nonofficial Remedies 1950, page 102).

The following dosage forms have been accepted:

EATON LABORATORIES, INC., NORWICH, N. Y.

Liquid Paracin: 473 cc. bottles: An emulsion containing 0.150 Gm. of benzyl benzoate U.S.P., 10 mg. of chlorophenothane and 20 mg. of ethyl aminobenzoate U.S.P. in each cc. Stabilized with sorethytan (20) monostearate and sorbitan monostearate.

Ointment Paracin: 56.7 Gm. tubes: An ointment containing 0.150 Gm. of benzyl benzoate U.S.P., 10 mg. of chlorophenothane and 20 mg. of ethyl aminobenzoate in each Gm.

PHENOBARBITAL SODIUM (See New and Nonofficial Remedies 1950, page 404).

The following dosage form has been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Solution Phenobarbital Sodium with Benzyl Alcohol 2%: 1 cc. ampuls: A solution containing 0.15 Gm. of phenobarbital sodium in each cc.

Council on Foods and Nutrition

This paper was prepared at the request of the Council and is one of a series appearing in THE JOURNAL. *In the near future the entire series will appear in book form as the Council's Handbook of Nutrition.*

JAMES R. WILSON, M.D., *Secretary.*

DEFICIENCIES OF THE WATER-SOLUBLE VITAMINS

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(Concluded from page 314)

NICOTINIC ACID

The well known disease, pellagra, can be assumed for present purposes to be the principal manifestation of a severe deficiency of nicotinic acid (niacin). There are, however, less severe degrees of nicotinic acid deficiency, and the symptoms and signs of such mild or early deficiency, sometimes called pellagra sine pellagra, are naturally related to the same tissues and organs as are affected in frank pellagra.

The chemical nature, function and other characteristics of nicotinic acid have been discussed elsewhere.[1] The chemical lesion which results from a deficiency of the vitamin is an interference with the formation and presumably the function of the respiratory enzymes, diphosphopyridine and triphosphopyridine nucleotide, of which nicotinic acid is an essential part, but how this is concerned with the lesions of the deficiency other than through a general interference with cellular metabolism is not known.

The gross and microscopic changes in the tissues in pellagra and nicotinic acid deficiency are notably lacking in any peculiar characteristics and are, in general, the simple, nonspecific type seen in a variety of inflammatory processes. In actual pellagra, however, the sum of the changes is sufficient to permit a pathologic diagnosis of the disease. The gross changes are those described in the portion on clinical manifestations. Microscopically, there are some lesions in the skin and colon, which Denton,[49] Eddy and Dalldorf [50] hold to be characteristic in the early stages. They consist of edema of the papillae, dilatation of the papillary blood vessels and deterioration of the superficial fine collagen layer of the corium. Later, the capillary epithelium is swollen and the finer collagen fragmented. Vesicles form and become infected, and sloughing of the epidermis ensues. Later, the superficial layer may be either atrophied or thickened. The nature of the increase in pigment is unknown. In the oldest lesions there is atrophy of the rete mucosum and a thin epidermis.

The walls of the colon are thickened and inflamed, with patches of pseudomembrane. Small gray bodies, cystic crypts of Lieberkühn, give a stippled appearance to the mucosa, a condition said by Herzenberg [51] to be found only in pellagra and sprue. Later, there is atrophy of the mucosa. None of these would seem to be early lesions according to present concepts of the deficiency. Scattered degeneration of axis-cylinders of the pyramided cells of the cortex and myelin degeneration of fibers in the spinal column, mostly the posterior, is found. This degeneration appears to be related to the deficiency of nicotinic acid. Peripheral lesions are uncommon and, when present, are probably the result of other deficiencies, as are the other neurologic lesions. None of the lesions of the nervous system is specific.

Functionally, there is a great reduction in the urinary excretion of N-methylnicotinamide, one of the forms in which nicotinic acid is excreted when the intake is greatly reduced [52] and hence, presumably, in cases of nicotinic acid deficiency. This effect is the basis for laboratory tests of the deficiency.

Numerous other pathologic changes are found in pellagra, many of which—cheilosis, corneal vascularization, gingivitis and peripheral neuritis—are undoubtedly the result of other nutritional deficiencies. Other changes may be related to the nicotinic acid deficiency itself but are variable in occurrence and degree and may also be related to other deficiencies or to various combinations of deficiencies. Included in this category [53] are gastric hypoacidity and anacidity, with decrease of Castle's intrinsic factor. An anemia which is often macrocytic and possibly related to the changes in the gastric juice or microcytic and possibly the result of an associated iron deficiency or directly related to the lack of nicotinic acid [54] is common.

Pellagra itself is too well known to require extensive description here. Such monographs as that of Harris [55] provide a full discussion. The characteristic features are dermatitis, glossitis, stomatitis, proctitis, vaginitis and mental changes. Acute and chronic forms occur, and relapses and remissions are common. The dermatitis is bilaterally symmetric and is more frequent and usually more severe on the exposed areas, the face, neck, hands, forearms and feet; however, in the more severe forms of the disease it can be found in protected areas, even in such places as the scrotum. Sunlight precipitates and intensifies the lesions, as do other traumas, such as heat and friction. The lesion is inflammatory in nature and in the acute cases ranges from an erythema resembling sunburn to a severe vesicular or bulbous inflammation with exudation, bleeding and ulceration with secondary infection. In chronic cases there is more roughness, scaling, thickening and crusting or cracking, with a brownish pigmentation. In cases in which the lesions are healed the skin may be thin and atrophic. In the chronic cases, sites of predilection are the dorsa of the hands, elbows, ankles, knees and neck.

The tongue and buccal mucosa in acute cases are bright red and swollen, often with ulceration and secondary infection. The papillae of the tongue are atrophic in varying degree, the tongue often being "bald" and glazed in the more severe cases of longer duration. Often the tongue is dry, but there may be increased salivation. The pharynx and esophagus may be similarly involved, and chewing and swallowing may be difficult or impossible. With the involvement of the intestine there is usually diarrhea, even in chronic cases, which may vary from several loose stools a day to severe, often bloody, watery diarrhea with mucus and tenesmus. There is often severe proctitis and in women vaginitis.

The mental symptoms range from changes in disposition, irritability, depression, poor concentration, apathy

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54. Wintrobe, M.: Clinical Hematology, ed. 1, Lea & Febiger, Philadelphia, 1942, p. 332.
55. Harris, S.: Clinical Pellagra, St. Louis, C. V. Mosby Company, 1941.

and poor memory to acute delirium. The latter is of the so-called toxic infectious type. In the more severe chronic cases there may be an actual dementia, but confusion, loss of memory and depression are more common. Such neurologic manifestations as degeneration of posterolateral tract with ataxia, spasticity and involvement of the sphincters may be a part of pellagra. The nervous manifestations are more frequent in the older subjects. In acute, severe pellagra there may be fever and other constitutional symptoms. Other changes often seen in pellagra are more likely the result of other deficiencies than that of nicotinic acid.

Although they fail to present the characteristic picture of pellagra, the symptoms and signs of mild nicotinic acid deficiency, or pellagra sine pellagra, are naturally related to the same tissues and organs as are affected in frank pellagra. They are, principally, the mucous membrane of the gastrointestinal tract, the vagina, the rectum, the skin (especially in the exposed areas) and the central nervous system. There are usually general signs of undernutrition and lack of energy, in spite of seeming "good health." Other lesions, as is true in frank pellagra, are probably those of associated deficiencies.

The symptoms and signs related to the gastrointestinal tract are a sore mouth, mild diarrhea, slight proctitis, anorexia and indigestion. None are severe. The sore mouth is the result principally of glossitis and, sometimes, of mild stomatitis and pharyngitis. Stomatitis without clearly defined glossitis is unusual. In mild or slight glossitis the tongue is reddened, usually only at the tip and sides, with some atrophy of the papillae, as a rule. In chronic cases, there may be some general atrophy of the tongue. The proctitis is often noticed only on examination. The diarrhea is inconstant and mild, often with only three to four stools a day, without any outstanding characteristics of the feces. The stools may, however, sometimes be watery and more frequent than is normal. The significance of the diarrhea is often attested by the results of the therapeutic trial. The indigestion is vague and indefinite.

The dermatitis is often lacking altogether, especially in the acute or recent type. When present, it is seldom of the acute, bright red, diffuse, inflammatory, sunburn type of dermatitis. That, apparently, is reserved for acute and severe forms of the deficiency occurring in conjunction with at least a moderate exposure to light. In the milder form, especially in the milder chronic form, there may be a slight dull reddening of the skin of exposed areas, ordinarily the backs of the hands and the neck, sometimes the dorsum of the foot. The lesions are symmetric, but often the borders are ill defined. There is roughness, some thickening and slight crusting. Unexposed areas which seem to be affected at times are the elbows, knees and scrotum. Thinning and atrophy of the skin and subcutaneous tissues, especially on the backs of the hands, seem to be more the effect of a chronic deficiency following severe, acute pellagra.

The nervous and mental symptoms seem to be relatively more common and more of a feature in the mild and especially the chronic cases. They are apt to be more confusing in respect to diagnosis, and recognition of their true significance often escapes one, particularly in the absence of dermatologic, mucous membrane and gastrointestinal symptoms, which is not infrequent. The manifestations are not specific. They consist of irritability, decreased powers of attention and concentration, lack of interest, personality changes and perhaps some memory disturbances. With this there may be some confusion, loss of judgment and actual decrease in mental ability. How much this may be due to associated deficiencies, that of thiamine, for example, may be doubtful, but I am of the opinion that much, perhaps all, of it can result from nicotinic acid deficiency alone because of the response and relief of these symptoms after treatment with nicotinic acid alone.

Diagnosis.—The diagnosis of pellagra is ordinarily easily made on the basis of symptoms and physical changes alone if one only keeps the disease in mind. The combination of glossitis, gastrointestinal symptoms and a symmetric dermatitis can scarcely be misinterpreted. Efforts to obtain a reliable diagnosis of earlier and milder lesions as well as finer differentiation in respect to duration (chronicity) and severity by means of microscopic examination of the tongue have, unfortunately, been unsuccessful.[56] Occasionally, severe mental disturbance, in the absence of or in association with only mild lesions and symptoms elsewhere, will be misleading and missed unless one bears the possibility in mind. The key to such a situation should be the history or knowledge of a possible deficiency or inadequate food intake.

For the mild or early severe deficiencies the key to diagnosis is again the symptoms and physical signs, supported by or detected because of knowledge of the dietary defect. In this instance, however, the signs and symptoms are the key, not because they are sufficient of themselves but because without them one is not likely to use supporting laboratory evidence or the highly important therapeutic test.

The laboratory tests of nicotinic acid deficiency are not particularly good or readily applicable. Yet, like some of the other laboratory tests for vitamin deficiencies, they do have a definite value. The most reliable and useful tests in common use are measurements of the excretion of nicotinic acid and substances resulting from the breakdown of nicotinic acid in the body, either spontaneously or after the administration of a test dose of nicotinic acid or nicotinamide. Only a relatively small portion of nicotinic acid is excreted as such, and the excretion shows little variation with different levels of intake, even in pellagra. There is also considerable variation in the excretion of N-methylnicotinamide, which is one of the larger fractions but accounts for only 20 to 30 per cent of a test dose of nicotinamide. Nevertheless, the measurement of the excretion of this substance for one hour, with the patient in the fasting state, or for longer periods or after the administration of a test dose can yield helpful information.[57]

Like all similar tests, those for the excretion of nicotinic acid suffer from lack of standardization and the failure to accumulate a large clinical reference by concentration on a single technic. Even less uniformity exists in regard to standards than exists with the excretion tests of other vitamins. Johnson [58] has suggested

56. Kruse, H. D.: The Lingual Manifestations of Aniacinosis, with Especial Consideration of the Detection of Early Changes by Biomicroscopy, Milbank Memorial Quarterly **20**: 262, 1942; Lesions of the Tongue and Niacin Deficiency, Nutrition Rev. **6**: 189, 1948.

57. Ruffin, J. M.; Cayer, D., and Perlzweig, W. A.: The Relation Between the Clinical Picture of a Mild or Early Vitamin Deficiency and Laboratory Determinations of Vitamin Levels, Gastroenterology **3**: 340, 1944. Sargent, F.; Robinson, P. F., and Johnson, R. E.: F_1 and F_2 of Najjar and Holt in Urine of Normal Young Men, J. Clin. Investigation **23**: 714, 1944. Najjar, V. A., and Holt, L. E., Jr.: Excretion of Specific Fluorescent Substances in Urine in Pellagra, Science **93**: 20, 1941.

58. Johnson, R. E., Sargent, F.; Robinson, P. F., and Consolazio, F. C.: Assessment of Nutritional and Metabolic Condition in the Field: General and Clinical Aspects, War Med. **7**: 227, 1945.

an excretion of 0.03 mg. or less of N-methylnicotinamide in one hour, while the patient is fasting, as indicating smaller tissue stores than normal and less than 0.5 mg. in four hours after administration of 50 mg. of nicotinamide by mouth as indicating chemical deficiency. Despite the drawbacks, conservative interpretation and the use of values at or near the zero level make the test useful.

Incidence.—The incidence of pellagra and, presumably, the less severe deficiencies of nicotinic acid has declined phenomenally in this country in the last ten years. Word of mouth reports from regions where pellagra was formerly common indicate its virtual disappearance, and such informal evidence is well supported by the study of Bean, Vilter and Blankenhorn.[59] In a hospital where pellagra had been relatively common only 1 case had been observed in thirty months prior to the time of writing of this report. There is undoubtedly a small residue of cases of pellagra, largely confined to patients with such illnesses as cancer of the esophagus and stomach, alcoholism and insanity, which produce conditions responsible for the disease. There is no way to estimate the frequency of pellagra sine pellagra, or mild deficiency of nicotinic acid. In 1941 only about 16 per cent of a population in a region in which pellagra had been endemic had symptoms and signs which might possibly have been pellagrous.[48] Elsewhere in the world, where conditions favoring nutrition are less good, pellagra still flourishes.

Treatment.—Aside from prevention and the treatment of patients with mild cases with a liberal antipellagra diet, treatment of the primary deficiency rests mainly on the use of nicotinic acid, or better, the amide (nicotinamide). The flushing reaction to the acid is avoided by the use of the amide, which is almost exclusively employed at present unless the flushing reaction is specifically wanted for other reasons. Concentrates such as yeast and liver extracts can be used in the milder cases and are always indicated as supplements to the diet or to treatment with the pure chemical, but even in mild cases with definite lesions it is better that nicotinic acid or amide be given initially in order to secure prompt and decided results. Ordinarily they can be given by mouth. The response is prompt and often dramatic. Often the diarrhea stops within twenty-four hours; the mental confusion clears, and the tongue and mouth become nearly free of soreness. The dose varies with the severity of the symptoms. Severe mental symptoms and diarrhea usually indicate need for larger doses. In cases of moderate severity 50 to 200 mg. of the acid or amide daily in divided doses will usually suffice. Even in severe cases it is seldom necessary to give more than 500 mg. Such doses can usually be reduced in a few days, and often administration of the vitamin can be discontinued in a week or ten days and replaced by concentrates and correct diet.

In some cases, particularly in severe, acute cases in which there is extensive glossitis and stomatitis, in cases in which there is mental disturbance and in cases in which there is other, interfering disease, it may be necessary to administer the vitamin parenterally. Sometimes this can be done with a stomach tube but the nature of the lesions less often permits this procedure. The vitamin can be given intravenously or intramuscularly in concentrations of 0.10 to 1 per cent in isotonic sodium chloride solution. The intravenous route is preferable. Other nutrients or drugs can be incorporated. Ten to twenty milligrams, or even larger amounts, can be given, especially in the high dilutions and when given slowly. For the reasons stated previously, use of the amide (nicotinamide) is preferred. If the acid is used, vasomotor reactions must be watched and the frequency of dosage limited. Liver extracts (crude) are also useful and may be employed parenterally in the acute phases. Ordinarily, parenteral treatment may be stopped after a few days and treatment continued by mouth. The doses for children are smaller, 10 mg. by mouth being sufficient for infants and young children and 25 mg. for adolescents, with the total dose per day in proportion.

Other nutrients should be administered as indicated, and the diet should be as liberal and general as possible. These patients are usually greatly undernourished and require a high calory and protein intake until weight has been regained. Whenever possible, the cause—ignorance, economic status, alcoholism or other disease—should be removed, but some patients will require maintenance doses of the vitamin or concentrates because of the nature of their other illnesses. Apparently, in some persons with chronic pellagra, changes occur which interfere with absorption or utilization. These persons require larger intakes, which are even then not always completely effective.

The local lesions, such as the dermatitis and stomatitis, often do not require any special treatment, but treatment of secondary infection may be necessary. Wet sodium chloride dressings and a protective covering may give some relief early but are not needed long. Sedatives and restraint may be required during acute stages.

VITAMIN C

The fully developed result of vitamin C deficiency is scurvy; lesser grades of the deficiency result in varying degrees of change in the tissues and organs affected in scurvy and, in the mildest discernible cases, in biochemical evidence of a deficient tissue content of ascorbic acid, with or without symptoms which may be related to that deficiency.

The chemical characteristics of ascorbic acid and its role in oxidative and reduction processes are well known and have been described elsewhere.[1] As will be discussed, the organic changes and some of the abnormal biochemical mechanisms resulting from a deficiency of ascorbic acid are readily demonstrated if the deficiency is great enough. Yet the exact mechanism by which the altered biochemical mechanism causes the organic changes remains unknown.

The most striking biochemical lesion observed clinically occurs in infants. Ascorbic acid is essential for the proper metabolism of the amino acids, tyrosine and phenylalanine, and, in premature infants and in normal infants given large amounts of such amino acids, the excretion of abnormal metabolic products of the breakdown of these amino acids can be demonstrated in the urine.[60] This occurrence can be abolished by treatment with ascorbic acid. A specific symptom or physical

59. Bean, W. B.; Vilter, R. W., and Blankenhorn, M. A.: Incidence of Pellagra, J. A. M. A. **140**: 872, 1949.

60. Sealock, R. R., and Silberstein, H. E.: The Excretion of Homogentisic Acid and Other Tyrosine Metabolites by the Vitamin C Deficient Guinea Pig, J. Biol. Chem. **135**: 251, 1940. Levine, S. Z; Gordon, H. H., and Marples, E.: A Defect in the Metabolism of Tyrosine and Phenylalanine in Premature Infants: II. Spontaneous Occurrence and Eradication by Vitamin C, J. Clin. Investigation **20**: 209, 1941. Sealock, R. R.; Perkinson, J. D., Jr., and Babinski, D. H.: Further Analysis of the Role of Ascorbic Acid in Phenylalanine and Tyrosine Metabolism, J. Biol. Chem. **140**: 151, 1941. Babinski, D. H., and Sealock, R. R.: Structural Specificity of Tyrosine in Relation to the Metabolic Action of Ascorbic Acid, J. Biol. Chem. **166**: 7, 1946. Fishberg, E. H.: Excretion of Benzoquinoneacetic Acid in Hypovitaminosis C, J. Biol. Chem. **172**: 155, 1948.

effect of this abnormality is not apparent, though it might be supposed to have an effect on growth because of interference with normal protein metabolism; it may, of course, be related to the various pathologic processes which appear as scurvy in the more severe deficiencies.

The other physiologic abnormalities associated with vitamin C deficiency are a decrease in the concentration of ascorbic acid in the tissues, particularly from the clinical point of view, in the blood plasma and in the leukocytes and a diminished excretion of the vitamin in the urine. No attempt will be made at this point to discuss the relation of decreased concentration in the blood or tissues or diminished excretion to the existence of a state of disease.

The primary structural change in vitamin C deficiency is a disturbance in the formation and maintenance of the intercellular ground substance. Apparently ascorbic acid is essential for the integrity of this tissue. In the intercellular ground substance are the collagen bundles. In the absence of a sufficient supply of ascorbic acid, the collagen bundles disappear and the ground substance takes on a thin, "watery" appearance and may eventually disappear. If ground substance is laid down, it is imperfect; collagen bundles and fibers are scarce or lacking. If the deficiency is severe, no ground substance is formed. Conversely, when adequate amounts of ascorbic acid are supplied, normal collagen and ground substances are laid down. Inasmuch as this ground substance is the essential matrix of connective tissue, the defect, simply expressed, is a lack of proper connective tissue, and, since connective tissue constitutes the effective framework tissue of all organs and structures, a defect in this tissue will explain the multiple, widespread and varied lesions of scurvy. The defect in the so-called cement substance of the capillaries, a lesion responsible for the various hemorrhagic manifestations, can be considered in the same category.

In the mildest cases the changes are slight or lacking; when they are more severe they constitute the characteristic pathologic changes of scurvy. These in turn vary in severity. The most striking structural changes, both gross and microscopic, occur in the bones of children. As in other conditions, the deficiency is apt to affect most severely young, rapidly growing tissue. One such tissue in the child, especially in the infant, is the skeleton.

The earliest microscopic change is an alteration in the osteoblasts, which become deformed, leave the trabeculae, come to resemble fibroblasts and even produce collagen and fibrils.[61] The orderly arrangement of the columns of cells in the proliferative cartilage and the function of the cartilage shaft is disturbed, and the normal "lattice" of calcified cartilage is replaced by irregular masses of calcified cartilage in fibrous tissue. This causes widening and irregularity of the lattice, which appears brittle, with microscopic fractures leading to the displacement of fragments.

With this, the atypical osteoblasts fail to form new bone and new trabeculae. This leads to development of a zone of rarefaction, a zone free of trabeculae between the older, previously formed trabeculae and the calcified matrix. This rarefied zone is essentially fibrous and a zone through which "subepiphysial infractions," or "epiphysial separation," occurs. At the same time bone formation ceases and bone resorption continues, perhaps is even accelerated, so that a general thinning of the whole bone occurs, particularly next to the cartilage.

The normal marrow is replaced at the epiphysial end by so-called "frame-work" marrow and loose connective tissue containing few cells and much abnormal intercellular ground substance resembling embryonic connective tissue. This tissue forms a band across the epiphysial end of the bone and joins with the zone of rarefaction to form the zone of the "Trümmerfeld" and the "Gerüstmark" shown in roentgenograms. The periosteum is loose and easily raised, even without underlying hemorrhage, which, however, is common and may strip the periosteum except for its attachments to the perichondrium. The centers of ossification in flat bones undergo similar changes, but to a lesser degree and with modifications resulting from the structural differences.

As indicated, many of these changes can be recognized in the roentgenogram before they are apparent on physical examination. The gross changes, which can be recognized on physical examination as well as in the roentgenogram, consist of a widening of the ends of the long bones (and of the costochondral junctions) resembling a similar widening seen in rickets. The areas most commonly affected clinically are the distal end of the femur, the proximal end of the tibia and humerus and the costochondral junctions. Both the microscopic and gross changes, although characteristic, may be confused with those of rickets and may be difficult to detect when the latter disease complicates the scurvy, as is not uncommon.

Resolution of the changes is rapid with adequate treatment, histologic evidence of repair appearing within a few hours after treatment with vitamin C is started. Fibroblasts begin to form new connective tissue, and capillary buds invade the area of hemorrhage. In the bone, a line of calcification appears suddenly throughout the length of the periosteum, incidentally furnishing a helpful confirmation of diagnosis and sometimes an initial diagnostic sign. The periosteum contracts down to the shaft, normal bone formation is resumed almost at once, new trabeculae form and eventually the deformities disappear.

In adults the skeletal lesions are much less frequent and extensive and obviously have no counterpart to the epiphysial lesions of childhood. Subperiosteal hemorrhage is the more frequent of such lesions.

The lesions of the capillaries cause hemorrhage in many parts of the body, those in the skin being frequent, most apparent and, hence, most useful in diagnosis. The most characteristic lesion is a perifollicular, petechial hemorrhage, often with hyperkeratosis about the follicle which may or may not be due to the deficiency of vitamin C. (It does not always accompany the hemorrhage.)

There may be purpuric or ecchymotic hemorrhages, even suggillations. Subcutaneous or intramuscular hemorrhages (hematomas) may develop, often extending along fascial planes. Such hemorrhages, as do those of the skin, occur in areas of stress and strain and are more common in the lower extremities. In infants hemorrhages in the skin are less common but tend to occur in areas of stress, such as at the border of the diapers. There may be hemorrhages into the orbit or various structures of the eye, into the serous cavities or, less commonly, into parenchymatous organs. Epistaxis is common, and the blood often appears "thin" and brownish, the result of anemia.

61. Eddy, W. H., and Dalldorf, G.: The Avitaminoses: The Chemical, Clinical and Pathological Aspects of Vitamin Deficiency Diseases, ed. 3, Baltimore, The Williams & Wilkins Company, 1944.

Edema occurs, usually confined to the lower extremities, although the patient may have a generally bloated, pale appearance. The edema is presumably due to increased permeability of the capillaries, though it may be complicated by edema of other origin, including that of cardiac weakness. There may be pericardial, peritoneal and pleural effusions, hemorrhagic or non-hemorrhagic.

The gums unquestionably are one of the sites of the most common, earliest and most easily observed lesions in scurvy,[62] and these lesions are one of the traditional and classic signs and symptoms of the disease. The gingivitis begins with hyperemia and redness of the interdental papillae, followed by swelling, hemorrhage, ulceration and secondary infection. In some cases the gums become so swollen and hypertrophied that they cover the teeth, even the cusps, and are bitten with each bite or chew, with resultant bleeding. Bleeding in general may follow mild trauma or be spontaneous. The secondary infection, often including that caused by spirochetal invaders and Borrelia vincenti, may lead to extensive sloughing. With severe scurvy the teeth become loosened and may be easily pulled with the fingers or lost spontaneously. From a bright red, the color of the gums changes to a dusky, livid hue.

While it is certain that vitamin C deficiency of a sufficient degree (scurvy) causes gingivitis, it is not at all clear that all gingivitis, or even any great portion of it, as commonly observed in surveys or in practice, is the result of vitamin C deficiency.[63] There is, as Kruse has pointed out,[64] a variation in intensity and in duration of the deficiency, as in all nutritional deficiency disease, which makes it possible to speak of mild acute, severe acute, mild chronic or severe chronic gingivitis. There can even be the superimposition of an acute on a chronic process. It does not follow, however, that all cases of gingivitis with thickened, blunted, contracted and fibrous papillae and margins are caused by chronic vitamin C deficiency, nor that all persons with slightly swollen, shiny, slightly reddened interdental papillae have mild acute gingivitis due to vitamin C deficiency. It is my opinion that many cases of the latter, especially in children and young persons with good dentures, are of such a nature and that some of the first-named kind, but fewer, have, as either a primary or a contributing cause, a deficiency of vitamin C. However, this is difficult to determine in a given person by inspection alone and without the use of accessory diagnostic aids, especially a controlled therapeutic test. Nor is the situation helped by the view that cases of chronic gingivitis which do not respond to months of adequate treatment with vitamin C fail to do so because the treatment has not been continued long enough. One characteristic of a nutritional deficiency disease is that it responds promptly to specific treatment unless irreversible changes have occurred. These changes are, in effect, scars, and it is possible that a certain portion of the changes in chronic gingivitis are of such a nature, as are the muscle atrophy remaining after a severe attack of beriberi or the scars of the cornea after an attack of xerophthalmia (keratomalacia).

In scurvy no correlation has been found between the incidence of gingivitis and other evidence of vitamin C nutrition or undernutrition. A positive correlation with advancing age has been apparent in some studies.[65]

Definite and characteristic changes occur in the teeth. Resorption of the dentin begins along Tomes' canals, the dentin being replaced by osteodentin, an inferior material. This resembles the changes which occur in the bones. The cementum is similarly affected. Hyperemia and edema of the pulp is followed by atrophy and degeneration of the odontoblast layer. Hemorrhage into the pulp, with the formation of cysts and areas of calcification or actual osteoid tissue, may occur. The teeth may loosen as a result of rarefaction of the alveolar processes. Similar changes probably occur in children, and there is little doubt that normal dentition is disturbed, with resultant defective formation. Because scurvy in children is most common in infants under 2 years of age, the effects on the teeth are only apparent later. Similarly, scurvy later in childhood is apt to affect most the nonerupted teeth, which are the more susceptible structures. The relation of vitamin C to caries, if any, is undetermined.

In addition to the well known pathologic changes just described, severe and chronic scurvy may produce degenerative changes in the skeletal muscles, cardiac hypertrophy, atrophy of the bone marrow with anemia [66] and atrophy of the adrenals. In addition to the possible direct relation between such changes and the body stores of vitamin C (the adrenals, for example, are especially rich in vitamin C), secondary causes are probably responsible for a part of these changes. For example, anemia, edema and increased capillary permeability, that is, poor nutrition and overwork, probably account for much of the cardiac enlargement.

In the mild deficiency of vitamin C, none of the lesions previously described are apparent, with the possible exception of the gingivitis. This means that they are rarely seen, because there is little actual scurvy seen, at least in this country, and the vast majority of patients with vitamin C deficiency will not exhibit them. There are microscopic lesions before gross lesions appear, but there is usually little reason to suspect them. When they are suspected, it is difficult or impractical to demonstrate them, with one or two exceptions. One of these is the increased capillary fragility, which may be made apparent by the capillary resistance test. It is interesting to note, however, that certain unintentional circumstances may disclose the presence of a deficiency under conditions of clinical significance. One of these is the healing of wounds, which may be impaired in the presence of unsuspected vitamin C deficiency.[67] The other is the occurrence of certain

62. (*a*) Campbell, H. G., and Cook, R. P.: Treatment of Gingivitis with Ascorbic Acid, Brit. M. J. **1**: 360, 1941. Burrill, D. Y.: Relationship of Blood Plasma Vitamin C Level to Gingival and Periodontal Disease, J. Dent. Research **21**: 353, 1942. Stamm, W. P.; Macrae, T. F., and Yudkin, S.: Incidence of Bleeding Gums Among R. A. F. Personnel and the Value of Ascorbic Acid in Treatment, Brit. M. J. **2**: 239, 1944. (*b*) Leeson, H. J., and others: Study of Ascorbic Acid Nutrition, Canad. M. A. J. **53**: 341, 1945. (*c*) Linghorne, W. J.; McIntosh, W. G.; Tice, J. W.; Tisdall, F. F.; McCreary, J. F.; Drake, T. S.; Greaves, A. V., and Johnstone, W. M.: The Relation of Ascorbic Acid to Gingivitis, Canad. M. A. J. **54**: 106, 1946.

63. Darby, W. J., and Milam, D. F.: Field Study of the Prevalence of Clinical Manifestations of Dietary Inadequacy, Am. J. Pub. Health **35**: 1014, 1945. Footnote 62.

64. Kruse, H. D.: A Concept of the Deficiency States, Milbank Memorial Fund Quarterly **20**: 245, 1942.

65. Youmans, J. B.; Patton, E. W.; Sutton, W. R.; Kern, R., and Steinkamp, R.: Surveys of Nutrition of Populations: Vitamin C Nutrition of a Rural Population in Middle Tennessee, J. Hygiene **42**: 254, 1945.

66. (*a*) Vilter, R. W.; Woolford, R. M., and Spies, T. D.: Severe Scurvy, A Clinical and Hematologic Study, J. Lab. & Clin. Med. **31**: 609, 1946. (*b*) Vilter, R. W.: Symposium on Nutrition of the Robert Gould Research Foundation, edited by Arthur Lejwa, Cincinnati, Robert Gould Research Foundation, Inc., **1**: 179, 1947.

67. Lanman, T. H., and Ingalls, T. H.: Vitamin C Deficiency and Wound Healing: An Experimental and Clinical Study, Ann. Surg. **105**: 616, 1937. Carney, H. M.: Wound Healing with Low Vitamin C Level, Ann. Surg. **123**: 1111, 1946. Barttell, M. K.; Jones, C. M., and Ryan, A. E.: Vitamin C Studies on Surgical Patients, Ann. Surg. **111**: 1, 1940.

infectious diseases, accompanied by exanthems, which, in the presence of vitamin C deficiency, may be hemorrhagic. Finally, it should be pointed out that some of the biochemical lesions may be disclosed by special procedures which can be used as diagnostic tests.

In addition to the biochemical and structural evidences of vitamin C deficiency, there are a few constitutional symptoms which, though not specific, are common and characteristic. By far the most important of these is pain, which in children is the most frequent manifestation and often the only one. This pain most often arises from the long bones and may be sufficiently severe to cause immobility and lead to a mistaken diagnosis of paralysis. With the pain there is local tenderness. Children, especially infants, fail to grow and gain weight (except for edema) and are pale, weak and irritable. Fever, rapid and shallow breathing (costochondral involvement), a rapid pulse and, sometimes, vomiting and diarrhea may develop. Adults usually have pain in the joints, weakness and lassitude. Palpitation and shortness of breath accompany the more severe deficiencies.

Diagnosis.—In addition to the history, which may reveal a dietary deficiency, the symptoms, which are usually vague, and the physical signs, which are often lacking except in actual scurvy, the diagnosis of ascorbic acid deficiency depends on certain special procedures and laboratory tests. Actually, as in most diseases, the diagnosis is the result of an accumulation of evidence from several of these sources.

One of the special diagnostic procedures is the roentgen examination of the skeleton or parts of it. The signs detected by roentgen examination have essentially the same defects and virtues as the other physical signs. They are characteristic. When clearly present they may be the first as well as the conclusive signs in infants, because of the peculiar circumstances which often lead to a "delayed" diagnosis in these patients. Actually, the diagnosis in such cases is often suspected, despite the absence of other signs, and, therefore, the roentgen examination is made. In mild cases, however, and in older children and adults, the roentgenographic appearance of the condition, unless it is a "surprise" observation, is present only a little ahead, if any, of other signs. It is helpful in a confirmatory way and as a check on improvement (calcification of subperiosteal hemorrhages during and following treatment). The roentgen signs are not specific and may be obscured by rickets when the latter is present, but, taken as a whole and in the light of other findings, they are characteristic.[68] In early cases it is difficult to decide whether or not they actually are present. The signs are as follows: (*a*) Deformity of soft parts from edema or hemorrhage. This may be subcutaneous, muscular or subperiosteal. (*b*) So-called ground glass atrophy, especially at the end of the shaft of the bones. (*c*) Cortical atrophy, with apparent increase in the width of the marrow cavity. (*d*) Increased density and widening of the zone of preparatory calcification, the "white line" of Frankel, at the epiphysial ends of the long bones. (*e*) Similar changes in corresponding areas in epiphysial centers of ossification. (*f*) The zone of rarefaction ("Gerüstmark") in the shaft next to the zone of provisional calcification. (*g*) Similar changes in the interior of centers of ossification, with loss of trabecular markings. Simple atrophy leaves these markings. (*h*) So-called epiphysial separation, often displaced toward the shaft or laterally. Separation occurs through the zone of rarefaction. (*i*) The presence of lateral spurs near the epiphysial junction, resulting from the displacement of the epiphysis or calcification of the periosteum. (*j*) Calcification (ossification) of the elevated periosteum. This is a sign of healing. (*k*) Subperiosteal, comminuted fractures of the cortex.

Another special procedure is the capillary resistance test. This is a test designed to disclose, through the mechanism of mechanical stress, a defect in the capillary wall not yet manifest spontaneously. A number of technics have been devised.[69] The original method consists of the obstruction of the venous return in the arm, which raises the venous and hence the capillary pressure and causes hemorrhages in those subjects with the capillary defect. Negative pressure (cupping) also has been used. Unfortunately, although the result of the test is positive in deficiency of sufficient degree, it is also positive in many persons who have no deficiency of vitamin C, not only in those with certain blood dyscrasias but in some without apparent cause. Hence, it is not usually considered reliable. It may be used, however, as a screen. A negative result of the test would be evidence against the deficiency, while a positive result would be suggestive of it and an indication for other tests.

The biochemical tests of tissue concentration and storage, despite some of the deficiencies they possess, are the most reliable and useful procedures available for the diagnosis of mild ascorbic acid deficiency, that is, deficiency below the level of scurvy. Undoubtedly, the most useful of these is the determination of the concentration of vitamin C in the blood plasma (serum). The values obtained have little significance in ordinary practice or use except at a level of concentration of zero or near zero. As Lowry and his associates have shown,[70] when the levels of ascorbic acid fall below 0.3 mg. per hundred milliliters of plasma, the concentration of ascorbic acid in the leukocytes has begun to drop. Symptoms do not ordinarily begin to appear until the concentration in the leukocytes and platelets has dropped to a low level. When the levels of ascorbic acid in the plasma reach zero or near zero (even with scurvy some vitamin C is often found in the serum, values of 0.05 to 0.1 mg. per hundred milliliters being frequent and zero concentration often lacking), the concentration in the leukocytes may for practical purposes be considered to be seriously reduced, and this reduction may be taken to indicate the first stage of actual deficiency (disease), which can be readily recognized. (Occasionally cases are encountered in which there are extremely low values without signs of scurvy, and, conversely, in rare cases in which there are extremely low values and signs of scurvy there is no rise in concentration despite administration of large doses of the vitamin.) As is well known, a decrease in the concentration of ascorbic acid in the leukocytes accompanies, or shortly precedes, the occurrence of

68. Kato, K.: Critique of the Roentgen Signs of Infantile Scurvy, with Report of 13 Cases, Radiology **18:** 1096, 1932. Park, E. A.; Guild, H. G.; Jackson, D., and Bond, M.: Recognition of Scurvy with Especial Reference to Early X-Ray Changes, Arch. Dis. Childhood **10:** 265, 1935. Bromer, R. S.: Roentgen-Ray Diagnosis of Infantile Scurvy, Am. J. Roentgenol. **19:** 112, 1928; **49:** 575, 1943.

69. Göthlin, G. F.: Outline of a Method for the Determination of Strength of Skin Capillaries and the Indirect Estimation of the Individual Vitamin C Standard, J. Lab. & Clin. Med. **18:** 484, 1933. Dalldorf, G.: A Sensitive Test for Subclinical Scurvy in Man, Am. J. Dis. Child. **46:** 794 (Oct.) 1933.

70. Lowry, O. H.; Bessey, O. A.; Brock, M. J., and Lopez, J. A.: The Interrelationship of Dietary, Serum, White Blood Cell, and Total Body Ascorbic Acid, J. Biol. Chem. **166:** 111, 1946.

gross signs of scurvy.[71] Values above zero in the plasma vary over a wide range without apparent significance in respect to truly pathologic decreases in the leukocytes or tissues. It must be realized, of course, that zero concentration in the plasma does not indicate how much lower the leukocyte or tissue content may be nor how long such a deficiency may have existed. Hence, a concentration of zero may exist with or without the presence of manifest scurvy. Also, temporary decreases in concentration, unrelated to a deficiency in the tissues, occur from such causes as infections. The determination of the concentration of ascorbic acid in the leukocytes can be made and gives additional information of value but is more difficult than measurement of the concentration in the plasma. Both macromethods and micromethods are available for the determination of the concentration of ascorbic acid in the plasma or serum[72] and in the white layer (leukocytes and platelets).[73]

Measurement of the excretion of the vitamin in the urine, with or without a "load" test, is useful and technically is simpler than an analysis of the blood. There are several technics which are suitable for clinical use.[74] They are less often used, however, than analyses of the blood because of the trouble of collecting and preserving properly a twenty-four hour urine specimen. Also, the test has been subject to criticism (as has the determination of the ascorbic acid in the blood) on the basis of the effect of the immediate diet. This effect, however, has been exaggerated as far as practical use is concerned. Although a decrease in excretion does occur quite promptly after dietary restriction, it does not reach minimum levels (around zero) in a person whose diet has in general been reasonably adequate. Such a low excretion indicates that the diet has been deficient for some time and hence that a deficiency may exist. When such an observation is combined with the failure of the excretion to rise significantly after the administration of an adequate test dose, a low tissue concentration may be assumed and with it the possibility of an actual pathologic deficiency state. Many methods, varying in dosage, time and other conditions, have been used, but no one has been adopted generally as standard.[75] An excretion of less than 3 mg. in four hours after administration of a test dose of 500 mg. of ascorbic acid has been suggested by Johnson as evidence of a chemical deficiency.[76] Such tests provide a roughly quantitative measure of the tissue content (by the repetition of test doses until the level of excretion rises). Obviously, a zero excretion and a zero or near zero response to load tests may occur with or without other signs of a deficiency (scurvy).

Tests of the concentration of ascorbic acid in the blood and of the urinary excretion as diagnostic aids have been severely criticized and declared of little or no value. This has been the result of an attempt to read more into the tests than was justified. Most often the criticism has been based on the failure to establish a positive correlation between the results of such determinations and such factors as dietary intake and non-specific, inconstant, inconsistent and sometimes nonsignificant physical signs and symptoms. Such correlation should not be expected except at the extremes of a very wide range. In particular no such correlation should be expected at concentrations of vitamin C in the blood above zero or at levels of excretion above insignificant amounts.

Unfortunately, in practice the physician tends to depend too greatly on the therapeutic trial or test. This procedure, which is a valuable tool, is too often used in an uncritical fashion.

Incidence.—The incidence of the actual state of pathologic vitamin C deficiency is difficult to determine. A distinction must be made between an apparently deficient intake of the vitamin or a diminished concentration in the tissues and an actual pathologic state, either structural or functional.

Scurvy is easy to recognize. In this country it is probably most frequent in children. A fairly accurate idea of its frequency can be gotten from such studies as those of Vilter and his associates [66a] and Dogramaci,[77] but the frequency of hypovitaminosis C, a pathologic state of ascorbic acid deficiency less severe than scurvy, is a different matter. Most modern estimates of the incidence have been made on the basis of the dietary intake, the physical signs of the disease, notably gingivitis, and the concentration of the vitamin in the tissues as reflected by its concentration in the blood. The difficulty with the interpretation of these data is that relatively few studies, on relatively few subjects, have been made of the correlation of the tissue (structural) and physiologic (functional) lesions and the intake and concentration of vitamin C in the tissues. To put it more simply, there have been relatively few simultaneous studies of intake, concentration in blood and tissues and biopsies (bone, connective tissue and capillaries) and still fewer studies of a longitudinal character following, with these technics, the development of the state of deficiency from the start of deficient intake to the appearance of scurvy. The few such studies that have been made have demonstrated a great lag in the appearance of detectable signs of the disease in relation to deficient intake and decline in tissue stores and a failure of the former to parallel to a close degree changes in the latter. There is likewise a failure to demonstrate a successive appearance of signs indicating a progressively more severe deficiency. For instance, changes in the gums, often considered an early sign, or in certain grades one of slight deficiency, need not appear in experimental scurvy until other, obvious signs are present.[78] It must be remembered, however, that in experimental scurvy the subjects have usually been

71. Crandon, J. H.; Lund, C. C., and Dill, D. B.: Experimental Human Scurvy, New England J. Med. **223**: 353, 1940. Vitamin C Requirement of Human Adults: Experimental Study of Vitamin C Deprivation in Man: A Preliminary Report by the Vitamin C Subcommittee of the Accessory Food Factors Committee, Medical Research Council, Lancet **1**: 853, 1948.

72. Farmer, C. J., and Abt, A. F.: Determination of Ascorbic Acid in Small Amounts of Blood, Proc. Soc. Exper. Biol. & Med. **34**: 146, 1936. Bessey, O. A.: A Method for the Determination of Small Quantities of Ascorbic Acid and Dehydroascorbic Acid in Turbid and Colored Solutions in the Presence of Other Reducing Substances, J. Biol. Chem. **126**: 771, 1938. Mindlin, R. L., and Butler, A. M.: Determination of Ascorbic Acid in Plasma: Macromethod and Micromethod, J. Biol. Chem. **122**: 673, 1937-1938. Lowry, O. H.; Lopez, J. A., and Bessey, O. A.: Determination of Ascorbic Acid in Small Amounts of Blood Serum, J. Biol. Chem. **160**: 609, 1945.

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74. Abbasy, M. A.; Harris, L. J.; Ray, S. N., and Marrack, J. R.: Diagnosis of Vitamin C Submutrition by Urine Analysis: Quantitative Data—Experiments on Control Subjects, Lancet **2**: 1399, 1935. Evelyn, K. A.; Malloy, H. T., and Rosen, C.: The Determination of Ascorbic Acid in Urine with the Photoelectric Colorimeter, J. Biol. Chem. **126**: 645, 1938.

75. Youmans, J. B., and Patton, E. W.: The Laboratory Diagnosis of Nutritional Deficiencies, Clinics **1**: 303, 1942.

76. Johnson, R. E.; Sargent, F.; Robinson, P. F., and Consolazio, F. C.: Assessment of Nutritional and Metabolic Condition in the Field: General and Clinical Aspects, War Med. **7**: 227, 1945.

77. Dogramaci, I.: Scurvy, A Survey of 241 Cases, New England J. Med. **235**: 185, 1946. McMillan, R. B., and Inglis, J. C.: Scurvy: A Survey of 53 Cases, Brit. M. J. **2**: 233, 1944.

78. Ascorbic Acid and the Health of the Gums, Nutrition Rev. **3**: 44, 1945. Crandon, Lund and Dill.[71]

healthy, young adults, with a single deficiency, who have not been subjected to the stresses and strains, including infections, physical exertion and environmental stress, which occur under natural conditions and which may well modify the picture of the disease. Furthermore, in experimental scurvy a long period of depletion has been necessary, while in a general population there may be many whose stores have become depleted and who are in a precarious balance and are dependent on the day's supply. These facts must be considered in interpreting the significance of the period of deficient intake, as must recent evidence indicating that requirements may be much smaller than has often been assumed.

Perhaps the soundest approximation of the frequency of hypovitaminosis C can be gotten from surveys in which determinations of the concentration of ascorbic acid in the blood have been made, provided that the findings are interpreted in the light of conclusions drawn from such studies as those of Lowry and his associates.[70] According to this one might assume with some justification that values of zero or near zero represented a pathologic state of deficiency on the basis that at this concentration in the plasma, the concentration in the leukocytes had reached or was about to reach a concentration accompanying or presaging imminent scurvy. It is not necessary, indeed it is incorrect, to assume that a pathologic state does not exist unless there is actual scurvy.

It should be remembered, however, that temporary depression of the concentration of ascorbic acid in the blood can occur without indicating a deficiency in the tissues (as may result from infections) and that in any subject the interpretation of the findings must be made in the light of all the evidence. On this basis, hypovitaminosis C can be assumed to exist in from 7 to 50 per cent of such groups as a general population [63] and the inmates of a mental hospital,[62b] respectively.

Treatment.—In mild cases, vitamin C deficiency can be satisfactorily treated with natural foods having a high vitamin C content such as citrus fruit juices. Even patients with moderately severe deficiencies, such as those in whom there are early signs of actual scurvy, can be relieved fairly quickly by similar means, though it is usually advisable to use pure chemical preparations in the initial treatment of such patients. Deficits of ascorbic acid in such cases usually amount to 2 or 3 Gm., and it is easier to supply such amounts in a concentrated form, particularly as the sore mouth in such cases may interfere to some extent with ingestion. The latter condition may make it necessary to give the vitamin parenterally; however, this is unusual. Intravenous administration is to be preferred to intramuscular. For intravenous injection it is not necessary that the acid be neutralized, if doses of only a few hundred milligrams, well diluted, are given slowly. A 10 per cent solution is satisfactory. Large doses should be neutralized, as should solution for intramuscular use. When neutralized it should be used at once, because it is destroyed rapidly under these conditions. Total doses of 300 mg. of ascorbic acid a day will suffice in most cases of mild to moderate scurvy, and less will be adequate in latent or slight deficiencies.

It is useful to determine the deficit and the relief of the deficit by means of tests of the excretion of the vitamin in the urine, especially in doubtful cases. A proper diet and dietary intake is of great importance, particularly in the correction of previous errors and the prevention of recurrences.

No specific toxic effects result from even relatively enormous doses of the vitamin. Reference has been made to the possibility of harm from the acid reaction of the solutions of the pure chemical. There may be rare instances of allergic sensitivity to foods rich in vitamin C and perhaps an idiosyncrasy to ascorbic acid itself.

Ordinarily, all the manifestations of scurvy respond promptly to administration of an adequate supply of the vitamin, and no other treatment is needed. Occasionally local treatment of ulcerative lesions is required, but simple cleanliness is about all that is required. The application of strong solution is to be avoided. Fractures are treated in the usual manner and respond well if the scurvy is recognized and treated. Hemarthrosis may require special treatment, including, at times, surgical intervention.

ACCEPTED FOODS

The following products have been accepted as conforming to the rules of the Council. JAMES R. WILSON, M.D., *Secretary.*

Clapp's Baby Food Division, American Home Foods, Inc., Rochester, N. Y.

CLAPP'S JUNIOR FOODS—VEGETABLES WITH LIVER, RICE AND BARLEY. Ingredients: Carrots, liver, tomato paste, rice, celery, dehydrated potatoes, barley, salt and dehydrated onions.

Analysis (submitted by manufacturer).—Total solids 10.65%, ash 0.75%, fat (ether extract) 0.04%, protein (N × 6.25) 2.79%, crude fiber 0.59%, carbohydrates other than crude fiber (by difference) 6.48%.

Vitamins and Minerals	Mg. per Hundred Grams
Vitamin A	2.54
Thiamine	0.055
Riboflavin	0.487
Ascorbic acid	1.45
Niacin	1.46
Calcium	17.10
Phosphorus	53.00
Iron	1.03
Copper	0.27

Calories.—0.37 per gram; 10.62 per ounce.

Use.—For use in the feeding of older infants and young children.

CLAPP'S STRAINED FOODS—VEGETABLES WITH BEEF, RICE AND BARLEY. Ingredients: Carrots, beef, tomato paste, celery, dehydrated potatoes, rice, barley, salt and dehydrated onions.

Analysis (submitted by manufacturer).—Total solids 12.49%, ash 1.03%, fat (ether extract) 0.58%, protein (N × 6.25) 3.99%, crude fiber 0.23%, carbohydrates other than crude fiber (by difference) 6.66%.

Vitamins and Minerals	Mg. per Hundred Grams
Vitamin A	1.20
Thiamine	0.016
Riboflavin	0.086
Ascorbic acid	0.28
Niacin	0.50
Calcium	13.8
Phosphorus	26.9
Iron	0.40
Copper	0.13

Calories.—0.46 per gram; 13.57 per ounce.

Use.—For use in the feeding of infants, convalescents and others requiring a soft diet.

CLAPP'S STRAINED FOODS—VEGETABLES WITH LIVER AND CEREALS. Ingredients: Carrots, liver, tomato paste, celery, dehydrated potatoes, rice, barley, salt and dehydrated onions.

Analysis (submitted by manufacturer).—Total solids 12.86%, ash 1.08%, fat (ether extract) 0.66%, protein (N × 6.25) 5.28%, crude fiber 0.22%, carbohydrates other than crude fiber (by difference) 5.62%.

Vitamins and Minerals	Mg. per Hundred Grams
Vitamin A	1.70
Thiamine	0.043
Riboflavin	0.470
Ascorbic acid	1.69
Niacin	1.58
Calcium	12.9
Phosphorus	60.3
Iron	0.51
Copper	0.46

Calories.—0.48 per gram; 14.06 per ounce.

Use.—For use in the feeding of infants, convalescents and others requiring a soft diet.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. - - - CHICAGO 10, ILL.

Edited by
AUSTIN SMITH, M.D.

Associate Editor
JOHNSON F. HAMMOND, M.D.

Editor for Current Medical Literature, GEORGE HALPERIN, M.D.

Subscription price - - Twelve dollars per annum in advance
Cable Address - - - - "Medic, Chicago"

SATURDAY, SEPTEMBER 30, 1950

INSPECTION OF HOSPITALS BY HOSPITALS

The delegates to the American Hospital Association recently voted to create its own nationwide hospital approval program. This program has been conducted by the American College of Surgeons for a quarter of a century but may now be discontinued by the College. To finance the program the delegates voted to increase membership dues by an average of more than 50 per cent. The proposal is said to call for the establishment of a commission which would include 13 hospital trustees, six hospital administrators and six physicians and surgeons, three to be appointed by the American College of Surgeons and three by the American College of Physicians.

This change of procedure in standardizing hospitals has been under consideration by the American College of Surgeons and the American Hospital Association for several months. The American Medical Association was not invited to participate in the early discussions, although the Association for many years has been in inspection and approval programs. In fact, it was quite by accident that an official of the American Medical Association learned what was contemplated. Immediately he requested further consideration, but little progress was made in developing a satisfactory joint program. There seemed to be little doubt that at least some voices in the American Hospital Association wanted their Association to be "plaintiff, judge and jury" in any standardization program.

In the September issue of *Hospitals* appears a report by John N. Hatfield, then president of the American Hospital Association. This report was published *before* the hospital group met in Atlantic City. After claiming credit for the American Hospital Association for various accomplishments, Mr. Hatfield presented a plea for taking over the hospital standardization program of the American College of Surgeons. He revealed that November had been discussed as the date for transfer. The Board of Trustees of the American Hospital Association on Aug. 5, 1950, adopted the following resolution:

WHEREAS, The American College of Surgeons, through its hospital standardization program, has made a most significant contribution to improving the quality of hospital care for the American people; and

WHEREAS, It is the understanding of the American Hospital Association that the American College of Surgeons is withdrawing from the hospital standardization field; and

WHEREAS, The American Hospital Association believes that a hospital standardization program is vital to the continued improvement of hospital care; and

WHEREAS, The membership of the American Hospital Association for many years has expressed interest in having the American Hospital Association conduct a hospital standardization program; and

WHEREAS, It is traditional in American life that organized groups shall assume responsibility for improving quality through standardization of the programs conducted by the members of such groups; and

WHEREAS, The members of hospital governing boards and the organization which represents them are the logical group for furthering the improvement of hospital care through national standardization, now therefore be it

Resolved, That the American Hospital Association establish a hospital standardization program; and be it further

Resolved, That the American Hospital Association invite interested organizations of the medical profession to cooperate in the development of standards relating to the practice of medicine in hospitals; and be it further

Resolved, That other professional organizations concerned with the problems of hospital standards be invited to cooperate with the American Hospital Association in a hospital standardization program.

When the Board of Trustees of the American Medical Association learned of the pending action of the Hospital Association, it sent a telegram to the hospital convention requesting delay of action "until the principles involved could be thoroughly discussed by those most concerned, namely, the American Medical Association, the American Hospital Association and the American College of Surgeons." Until then no representative of the American Medical Association had been invited to discuss the standardization program at the Atlantic City convention. After dispatch of the telegram, Dr. Elmer Henderson, President of the American Medical Association, and two members of the Board of Trustees went to Atlantic City to discuss the problem with officials of the Hospital Association. In spite of this, however, the delegates of the American Hospital Association adopted a resolution authorizing their board of trustees to establish a standardization program.

For some years groups of medical specialists have denounced a practice in some hospitals which results in these physicians' being employed by the hospitals, which in turn submit bills to the patients for the services rendered by the specialists. Radiologists, anesthesiologists and pathologists have been particularly concerned by the trend. The House of Delegates of the American Medical Association has given careful consideration to this growing trend and at the 1950 annual meeting adopted a resolution protesting the practice and urging physicians and medical societies to recognize their responsibilities and medical ethics.

Now the hospitals apparently want to extend further their control over medical practices and superimpose lay judgment on professional knowledge and ability. By

their decision to authorize the American Hospital Association to undertake an inspection program for hospitals, the delegates to the convention of the Hospital Association indicated an obvious willingness to encourage further inroads on professional freedom.

We hope that the Board of Trustees of the American Hospital Association will interpret broadly the directive from the delegates to establish a standardization program "after consultation with other organizations." The medical profession will not allow professional staffs of hospitals to fall under the complete control and domination of hospital trustees and administrators. In any hospital each participating group has certain responsibilities to the hospital, the patients, the community and to each other. Physicians have as one of their responsibilities the welfare of their patients, and they cannot and will not compromise in this respect. Physicians know better than lay groups the medical needs of patients. They are spending their lives determining these needs and their solution. If the American Hospital Association proceeds to usurp the rights of professional groups to determine the best medical standards, it can expect, to say the least, some very interesting developments. One thing is certain: The American Medical Association will not step quietly aside if the medical profession is convinced the welfare of its patients is jeopardized. It has under discussion its own hospital standardization program in preparation for such an eventuality.

DEFENSE PLANNING

The recent support of the American Medical Association of legislation providing for the calling of carefully selected physicians for service with the armed forces lends additional emphasis to the interest of the medical profession in all phases of medical activities. Included in these broadening interests is the creation of offices to serve the nation, especially during crises. One of the most important of these is the Health Resources Advisory Committee of the National Security Resources Board. Its membership consists of Howard A. Rusk, M.D., professor and chairman of the Department of Rehabilitation and Physical Medicine, New York University College of Medicine, and associate editor, *New York Times;* James C. Sargent, M.D., professor of urology, Marquette University School of Medicine, Milwaukee, and Chairman of the Council on National Emergency Medical Service of the American Medical Association; Harold S. Diehl, M.D., dean of medical sciences, University of Minnesota, Minneapolis, and member, Advisory Committee on Health Services of the United Mine Workers Welfare Fund; Mr. David M. Heyman, president, The New York Foundation, and chairman of the board of the Health Insurance Plan of Greater New York; Leo J. Schoeny, D.D.S., chairman, Council on Dental Health, American Dental Association, and past chairman of the Health Division, Council of Social Agencies, New Orleans; Mrs. Ruth Kuehn, R.N., dean of the School of Nursing at the University of Pittsburgh and a member of the National Committee for the Improvement of Nursing Services; William P. Shepard, M.D., professor of public health at Stanford University and vice president of the Metropolitan Life Insurance Company, and John Pastore, M.D., executive director, Hospital Council of Greater New York and consultant in hospital facilities and medical care for the state of Connecticut.

The Committee will assist and advise the National Security Resources Board on problems of the nation's health relating to national mobilization and in the event of atomic war and will act to coordinate federal agencies on policy problems dealing with health, hospitalization and medical services, thus becoming the first government agency ever established for coordination of all national health resources.

The National Security Resources Board was established by the National Security Act of 1947. Its chairman is W. Stuart Symington, former Secretary of the Department of the Air Force. It is the function of the board to advise the President concerning the coordination of military, industrial and civilian mobilization.

The Committee will review the needs of the civilian population and the armed forces, which will include consideration of allocation of physicians, dentists, nurses and others associated with health activities. The field in which this advisory group can operate is broad. For example, it might advise on the number of physicians who can be released from a community for service in the armed forces, amount of blood necessary for an atomic bomb attack, maintenance of health in industry, relation of animal diseases to man and protection of water and milk supply. It might also advise on the use of the physically handicapped and those past retirement age if general mobilization should be necessary. These are only a few of the problems that might face the new Health Resources Advisory Committee, as it makes policy recommendations relating to mobilization, allocation and utilization of personnel necessary for wartime health services and veterinary medical services; utilization of health facilities; provision of health equipment and supplies, and maintenance of essential teaching and research in health fields. Its importance cannot be overestimated.

The Health Resources Office recently was established as one of the nine major offices of the National Security Resources Board. The director of the office is Dr. Norvin C. Kiefer. This new office succeeds, with increased responsibilities, the Health Resources Division of the Civil Defense Office of the National Security Resources Board. According to Mr. Symington, the office is charged with the task of planning for use of the nation's health resources in wartime. In addition to providing a secretariat general staff work, estimates and recommendations for Dr. Rusk's Committee to

advise the Board Chairman on health mobilization policies, the office will act in an advisory capacity to the Civil Defense Office.

Another aspect of the far reaching planning for emergencies is the Medical Services Division in the office of the Secretary of Defense, which was motivated by studies undertaken by the Hoover Commission. The Director of Medical Services, who is Dr. Richard L. Meiling, was to have "general direction, authority and control over administration and utilization of personnel and facilities of the medical services" of the National Military Establishment. The creation of such an office was welcomed by many who were critical of the wastage of medical talents during World War II. With the threat of another war before this nation—a war in which an incredible number of civilian casualties may occur—and with the need for conservation of health personnel and facilities, there must be careful determination of all needs and proper and nonselfish disposition of what is available. Civilian medicine rightfully has an interest and a great civic responsibility in such determination. Any upset in the proper balance could end in a national tragedy. The medical profession is much interested in the Medical Services Division in the office of the Secretary of Defense and will aid in wherever possible in attaining increased perfection in the employment of health services by improved utilization of facilities and personnel. This and other offices and agencies and the armed forces have much to offer, especially when proper understanding, liaison and cooperation are maintained. As General George C. Marshall assumes the office of Secretary of Defense, he and all his colleagues who are concerned with the preservation of this country and its opportunities and other blessings can be assured of the willingness of the medical profession of the United States to do its part and to offer its cooperation and support as needed.

PHEOCHROMOCYTOMA

Pheochromocytoma, as defined by Wilkins and his co-workers [1] in a recent communication, is a tumor resulting from the abnormal proliferation of pheochromocytes, or mature cells of the endocrine series that arise from the primitive sympathogonia and normally form the endocrine portion of the adrenal medulla. These tumors may occur wherever there is chromaffin tissue but usually are observed in the adrenal medulla or in other retroperitoneal locations, such as the aortic chromaffin bodies of Zuckerhandl. Pheochromocytomas are usually localized benign tumors, although occasionally they may undergo malignant transformation. Their most interesting characteristic, these authors point out, is the production of excessive hormonal secretions. Their clinical manifestations, therefore, are such that the patient frequently is thought to be suffering from a metabolic disease such as thyrotoxicosis or diabetes mellitus.

The incidence of pheochromocytoma is probably greater than has been supposed. Although to date only 200 cases were reported in the literature, the fact that Bartels and Cattell [2] were able to diagnose the disease in four cases during a three year period suggests that the actual occurrence is much greater. In Smithwick's series of 1,000 hypertensive patients subjected to lumbodorsal sympathectomy, in which both adrenals were explored, the incidence of pheochromocytoma was 0.5 per cent.

Characteristically, pheochromocytomas give rise to spells of hypertension accompanied with headache, palpitation, sweating, pallor, coldness of the extremities and nausea and vomiting. Metabolic studies frequently demonstrate during these paroxysmal attacks an elevated basal metabolic rate and decreased dextrose tolerance. Pyelograms may show a downward displacement of the kidney or calcification. The hypertension may be continuous and may suggest idiopathic or essential hypertension. Green,[3] in a review of 51 cases of pheochromocytoma from the literature, found that only 14 patients of this group had intermittent hypertension, while the majority, or 37 patients, presented chronic hypertension. Wells and Bowman [4] suggested that all patients with functioning pheochromocytoma will eventually reach the stage of chronic hypertension if they live long enough.

The symptoms associated with paroxysmal hypertension have been attributed to the release of excessive amounts of epinephrine-like substances from the tumors. Holton [5] was first to identify arterenol (norepinephrine or nor-adrenaline), as well as epinephrine, in such chromaffin tumors and to postulate that, since arterenol has greater pressor activity than epinephrine, it might be the cause of attacks of hypertension. Goldenberg and his associates [6] confirmed these observations. They found large amounts of arterenol in such tumors, especially in patients in whom persistent hypertension had been present.

The typical syndrome of paroxysmal hypertension with signs of vasoconstriction, pallor, headache, nausea, vomiting, tachycardia and sense of constriction in the epigastrium is suggestive. The ordinary methods of diagnosis such as palpation and intravenous pyelography are not dependable. Diagnostic perirenal insufflation of air is neither dependable nor safe. Investigators

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2. Bartels, E. C., and Cattell, R. B.: Pheochromocytoma: Its Diagnosis and Treatment, Ann. Surg. **131**: 903 (June) 1950.

3. Green, D. M.: Pheochromocytoma and Chronic Hypertension, J. A. M. A. **131**: 1260 (Aug. 17) 1946.

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5. Holton, P.: Noradrenaline in Adrenal Medullary Tumours, Nature **163**: 217 (Feb. 5) 1949.

6. Goldenberg, M.; Faber, M.; Alston, E. J., and Chargaff, E. C.: Evidence for the Occurrence of Nor-Epinephrine in the Adrenal Medulla, Science **109**: 534 (May 27) 1949.

have therefore endeavored to find a reliable and safe method of diagnosis by utilizing pharmacologic agents, which either stimulate or inhibit the adrenal manifestations of the disease. Roth and Kvale [7] reported that intravenous injection of small doses of histamine produced attacks identical with the spontaneous paroxysmal attacks of pheochromocytoma. Results of the test have been negative in some cases of pheochromocytoma; in others the test has proved to be dangerous because of a violent hyperreaction. Other drugs which stimulate arterial tension, such as insulin, tetraethylammonium bromide and methacholine chloride, have been tried but have also been found not to be reliable in all cases. Diagnostic agents which block the hypertensive effects of the tumor seemed preferable. Goldenberg and his co-workers [8] experimented with two benzodioxanes (2, 4-dimethyl piperidyl) methylbenzodioxane (1164F) and piperidylmethyl benzodioxane (933F). They reasoned that, if the hypertension is due to circulating epinephrine-like substances, it should be reduced significantly by the injection of an adrenolytic compound, whereas, if the hypertension was due to other causes, it should persist.

Goldenberg and Aranow,[9] in a recent publication, reported production of hypertension in normotensive persons by the infusion of nor-epinephrine. They were able to diminish this reaction by infusion of benzodioxane (2-[1-piperidylmethyl]-1,4-benzodioxan, or 933F), although to a lesser degree than that produced by the methylated homologue of arterenol, epinephrine. They reasoned, therefore, that the benzodioxane test was equally suitable for diagnosis of hypertension due to circulating epinephrine or to arterenol. Fifty-nine patients with operatively demonstrated pheochromocytomas have shown positive reactions to the benzodioxane test, while only three false negative reactions have been observed.

The clinical importance attached to this interesting tumor is that surgical removal leads to a complete cure unless the tumor is malignant or has caused irreversible vascular and renal damage. The literature contains a number of reports of successful operative cures of pheochromocytoma. Among the more recent are those of Bartels and Cattell,[2] who have successfully operated on four patients. These authors point out that the chief danger in the removal of the tumor is a severe hypertensive reaction with subsequent acute left heart failure. This danger, they believe, can be avoided by use of an adrenolytic agent in the course of the operation.

The resemblance between chronic pheochromocytic hypertension and idiopathic hypertension suggests the operation of basically similar mechanisms in the production of both diseases. This resemblance, however, does not indicate that the angiospastic agent in idiopathic hypertension is necessarily epinephrine.

7. Roth, G. M., and Kvale, W. F.: A Tentative Test for Pheochromocytoma, Am. J. M. Sc. **210**: 653 (Nov.) 1945.
8. Goldenberg, M.; Snyder, C. H., and Aranow, H., Jr.: New Test for Hypertension Due to Circulatory Epinephrine, J. A. M. A. **135**: 971 (Dec. 13) 1947.
9. Goldenberg, M., and Aranow, H., Jr.: Diagnosis of Pheochromocytoma by the Adrenergic Blocking Action of Benzodioxan, J. A. M. A. **143**: 1139 (July 29) 1950.

NEUTRALIZERS IN HOME PERMANENT WAVING KITS

In the past, poisoning due to potassium bromate was rarely encountered. However, since the introduction into commerce of home permanent waving kits which include a neutralizing solution of potassium or, less frequently, sodium bromate, several reports have appeared in the literature emphasizing the potential danger of these inorganic salts.

In 1947, Dunsky [1] reported the accidental ingestion of a "cold wave" neutralizer which resulted in an ultimate clinical picture of anuria followed by death. A second case of bromate poisoning in similar circumstances is reported by Thompson and Westfall [2] as follows: "The case was marked by protracted vomiting, diarrhea, convulsions of several hours' duration, and anuria with azotemia. Treatment included the use of 4 per cent sodium sulfate and hypertonic plasma as diuretics. Recovery followed, and the child is now living and well. The use of sodium thiosulfate as an antidote has been suggested." Three patients showing varying degrees of toxicity from moderate gastrointestinal irritation to severe toxic nephrosis as a result of ingesting a "cold wave" neutralizer are reported by Kitto and Dumars.[3] The potential danger of this substance to suicidal adults is emphasized by Robertson and his co-workers.[4] They describe a patient with an apparent psychopathic personality and strong suicidal drives who ingested a potassium bromate-neutralizing solution. Recovery followed appropriate therapy.

It should be pointed out that representative manufacturers of home permanent wave kits at present include caution notices both in their directions for use and on the format of the neutralizer package to warn consumers of the toxic nature of the product. Although research is in progress to develop a suitable substitute for the bromates as neutralizers, it can be expected that some time will be necessary to complete this work. In the meantime, over 25,000,000 permanent wave kits will probably be used this year in American homes, and physicians must be mindful of the possibility of harm from accidental or deliberate ingestion. For this reason, it is important that the potential dangers of these neutralizers, the symptoms of bromate poisoning and the best available therapy be common knowledge among those responsible for public health.

1. Dunsky, I.: Potassium Bromate Poisoning, Am. J. Dis. Child. **74**: 730 (Dec.) 1947.
2. Thompson, H. C., and Westfall, S. W.: Potassium Bromate Poisoning: Report of a Case Due to Ingestion of a "Cold Wave" Neutralizer, J. Pediat. **34**: 362 (March) 1949.
3. Kitto, W., and Dumars, K. W.: Potassium Bromate Poisoning, J. Pediat. **35**: 197 (Aug.) 1949.
4. Robertson, F., Flothow, M. W., Jr., and Kissen, M. D.: Potassium Bromate Poisoning: Report of a Case, J. Pediat. **36**: 241 (Feb.) 1950.

WASHINGTON NEWS

(From the American Medical Association Washington Office)

The Doctor Draft Law

Unavoidable delay in putting the doctor-draft law into operation further tightened the medical manpower situation in the three services. While waiting for young nonveterans to become available under this law, the services have only one large pool from which to supply their physician requirements. This is the group of former V-12 men already in the Navy reserves and therefore subject to call.

By concentrating on this group, the Navy is able to meet most of its needs. Also, at this writing plans are under way to make some of these Navy reserves available to the Army if not enough men volunteer for Army duty. The Air Force, whose reserve list is limited, so far has avoided mandatory calls, either in organized units or individual reserves, except for a few former ASTP men. It is clear now that the doctor-draft in itself will not make additional physicians available for many more weeks. However, the services base their present policy of limited call-ups on the hope that men in the top priority classifications will volunteer without waiting for the draft law to reach them.

After the draft law was passed and signed by the President, several time-consuming operations remained before it became effective. All departments affected had to make their recommendations. These included the National Security Resources Board, Army, Navy and Air Force, Department of Defense and Selective Service, which administers the law. After receipt of these recommendations, one more step remained—these recommendations had to be submitted to the President's personal advisers for a final check. Only then could Mr. Truman issue the essential directives covering such details as where to register, when to register and the order of registration by categories.

Requirements for Draft Inductees

The Army has announced a drastic reduction in dental requirements for draft inductees. Henceforth, the general policy will be to induct otherwise qualified men if their dental condition is "correctible," even to the extent of constructing full upper and lower dentures.

The major criterion will be: ". . . well nourished, of good musculature, free from gross dental infections and having a minimum requirement of an edentulous upper jaw and/or an edentulous lower jaw, corrected or correctible by a full denture or dentures." Only specific reasons for dental rejections now are: "Disease of the jaws and associated structures which are irremediable or not easily remedied, or which are likely to incapacitate the individual for satisfactory performance of military duty . . . (and/or) extensive loss of oral tissue in an amount that would prevent replacement of teeth by a satisfactory denture." Prior to issuance of the new regulation, an inductee was required to have a minimum of 16 teeth in proper occlusion, although satisfactory dentures and bridges might be counted. One effect of the lower requirement will be the recall for new examination of all prospective inductees who were rejected for dental defects. The Army lowered its dental standards by reverting to standards announced in 1948, but subsequently tightened. Stricter dental standards were necessary, according to the Army, because there were not enough dental officers to make the restorations which will be required under the new system. It is anticipated that the doctor-dentist draft law will make these dental officers available in the near future.

Civil Defense

The role American medicine likely will play in case of atomic warfare is set forth in the newest report from the National Security Resources Board. The document, "United States Civil Defense," is for sale at the U. S. Government Printing Office, Washington, D. C., for 25 cents. It will be followed in a few weeks by another report, this one devoted exclusively to the health problems involved. It was prepared in anticipation of the creation of a new Federal Civil Defense Agency, which would be empowered to allocate health supplies and facilities among communities under emergency conditions if cooperation is not achieved by voluntary arrangements. (H. R. 9689 and S. 4162 provide for creation of the new agency.)

President Truman has funds available to put the national program in operation without waiting for Congressional appropriations, and he is understood to be planning the establishment of the new agency by executive order on a temporary basis. Two important concepts govern the thinking behind the national civil defense program, as it applies to medical as well as other problems. First, virtually all civil defense work must be undertaken and carried through by civilian persons and organizations; the military is not undertaking this responsibility but will contribute what assistance it can. Second, the primary responsibility is local, not national. National and regional federal organizations will be set up, but their task will be only to coordinate the work of state, city and community civil defense.

A nationwide network of volunteer organizations is envisaged, with millions of civilians participating. Because no area could accumulate personnel and supplies to deal with an actual emergency, agreements are expected to be worked out in advance for mutual assistance. Although financing will be largely a local responsibility, the federal government is expected to take over responsibility for some regional stockpiling, including the purchase of medical supplies for regional centers. Local stockpiling will be a local responsibility. The report makes general recommendations regarding functional organization of state and local health services, but N.S.R.B. promises to provide specific detailed recommendations at an early date. These will be included in the new handbook.

Army Medical Library

Although its future status and location still are undecided, the Army Medical Library is said to be in no immediate danger of being closed out or critically restricted in its operations. In the latest of a long series of actions regarding the library, the Defense Secretary has asked the National Research Council to study the situation and make recommendations. Meanwhile, the library continues to function in its present crowded quarters. One question to be decided is the site of a new library building, for which Congress has authorized planning. There is also the question of whether the library should be shifted out of the Defense Department (about 80 per cent of its work is nonmilitary) and, if so, to which department or agency. In his request to the Research Council, the Defense Secretary emphasized that the "important work of the library" should go on without interruption.

Notes

The seventh annual meeting of the Army Medical Library Association of Honorary Consultants is scheduled for October 20, in Washington. Nominee for president is Dr. Wilburt C. Davison, Durham, N. C.; vice president, Dr. Henry R. Viets, Boston; treasurer, Dr. Robert M. Stecher, Cleveland; secretary, Dr. Thomas E. Keys, Rochester, Minn., and member at large, Dr. Edward H. Cushing, Washington, D. C. . . . Dr. Robert W. Berliner of Columbia University is the new chief of the Laboratory and Clinical Section on Kidney and Electrolyte Metabolism of the National Heart Institute. . . . The Navy is calling some WAVE reservists in its Hospital Corps back to active duty under mandatory orders. These are the only WAVES so far to be called up involuntarily. . . . Dr. George C. Lippincott, the oldest living retired Navy officer, celebrated his one hundredth birthday this month. One of his letters to the Navy Surgeon General, Clifford A. Swanson, was presented to the Naval Historical Foundation. Dr. Lippincott spent 11 years as a Medical Corps officer and was ship's surgeon on the vessel which carried President Grant and his family to the Mediterranean.

GOVERNMENT SERVICES

The Doctor Draft Law

The following legislation concerning the induction of doctors and others into the military services has been signed by the President.

[PUBLIC LAW 779—81ST CONGRESS]

[CHAPTER 939—2D SESSION]

[S. 4029]

AN ACT

To amend the Selective Service Act of 1948, as amended, so as to provide for special registration, classification, and induction of certain medical, dental, and allied specialist categories, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 4 of the Selective Service Act of 1948, as amended, is hereby amended by adding at the end thereof the following subsections:

"(i) (1) Notwithstanding any other provision of this title, except subsections 6 (j) and 6 (o), the President is authorized to require special registration of and, on the basis of requisitions submitted by the Department of Defense and approved by him, to make special calls for male persons qualified in needed—

"(A) medical and allied specialist categories who have not yet reached the age of fifty at the time of registration, and

"(B) dental and allied specialist categories who have not yet reached the age of fifty at the time of registration.

Persons called hereunder shall be liable for induction for not to exceed twenty-one months of service in the Armed Forces. No such person who is a member of a reserve component of the Armed Forces shall, so long as he remains a member thereof, be liable for registration or induction under this subsection, but nothing in this subsection shall be construed to affect the authority of the President under any other provision of law to call to active duty members and units of the reserve components. No person in the medical, dental, and allied specialist categories shall be inducted under the provisions of this subsection after he has attained the fifty-first anniversary of the date of his birth.

"(2) In registering and inducting persons pursuant to paragraph (1) of this subsection, the President shall, to the extent that he considers practicable and desirable, register and induct in the following order of priority:

"First. Those persons who participated as students in the Army specialized training program or similar programs administered by the Navy, and those persons who were deferred from service during World War II for the purpose of pursuing a course of instruction leading to education in one of the categories referred to in clauses (A) and (B) of paragraph (1) of this subsection, who have had less than ninety days of active duty in the Army, the Air Force, the Navy, the Marine Corps, the Coast Guard, or the Public Health Service subsequent to the completion of or release from the program or course of instruction (exclusive of the time spent in postgraduate training).

"Second. Those persons who participated as students in the Army specialized training program or similar programs administered by the Navy, and those persons who were deferred from service during World War II for the purpose of pursuing a course of instruction leading to education in one of the above categories, who have had ninety days or more but less than twenty-one months of active duty in the Army, the Air Force, the Navy, the Marine Corps, the Coast Guard, or the Public Health Service subsequent to the completion of or release from the program or course of instruction (exclusive of the time spent in postgraduate training).

"Third. Those who did not have active service in the Army, the Air Force, the Navy, the Marine Corps, the Coast Guard, or the Public Health Service subsequent to September 16, 1940.

"Fourth. Those not included in the first and second priority who have had active service in the Army, the Air Force, the Navy, the Marine Corps, the Coast Guard, or the Public Health Service subsequent to September 16, 1940. Inductions of persons in this priority shall be made in accordance with regulations prescribed by the President which may provide for the classification of such persons into groups according to the number of full months of such service which they have had and for the induction of the members of any such group after the induction of the members of any other such group having a lesser number of full months of such service.

In the selection of individuals from among the categories established by subsection (i) for induction, the President is authorized, under such rules and regulations as he may prescribe, to provide for the determent of any individual whose determent is found to be equitable and in the national interest, taking into consideration the length of his previous service in the Armed Forces (including the Coast Guard and the Public Health Service) of the United States, the extent of his participation in the Army specialized training program or similar program administered by the Navy, reasons of hardship or dependency, and the maintenance of the national health, safety, or interest.

"(3) It is the sense of the Congress that the President shall provide for the annual determent from training and service under this title of numbers of optometry students and premedical, preosteopathic, preveterinary, preoptometry and predental students at least equal to the numbers of male optometry, premedical, preosteopathic, preveterinary, preoptometry and predental students in attendance at colleges and universities in the United States at the present levels, as determined by the Director.

"(j) The President shall establish a National Advisory Committee which shall advise the Selective Service System and shall coordinate the work of such State and local volunteer advisory committees as may be established to cooperate with the National Advisory Committee, with respect to the selection of needed medical and dental and allied specialist categories of persons as referred to in subsection (i). The members of the National Advisory Committee shall be selected from among individuals who are outstanding in medicine, dentistry, and the sciences allied thereto, but except for the professions of medicine and dentistry, it shall not be mandatory that all such fields of endeavor be represented on the committee.

In the performance of their functions, the National Advisory Committee and the State and local volunteer advisory committees shall give appropriate consideration to the respective needs of the Armed Forces and of the civilian population for the services of medical, dental, and allied specialist personnel; and, in determining the medical, dental, and allied specialist personnel available to serve the needs of any community, such committees shall give appropriate consideration to the availability in such community of medical, dental, and allied specialist personnel who have attained the fifty-first anniversary of their birth.

SEC. 2. Notwithstanding the provisions of section 203 of Public Law 351, Eighty-first Congress, commissioned officers of the reserve components called or ordered to active duty with or without their consent, shall, if otherwise qualified, be entitled to the benefits of section 203 of Public Law 351, Eighty-first Congress.

SEC. 3. Section 202 of the National Security Act of 1947, as amended, is hereby amended by adding at the end thereof the following subsections:

"(g) Under such regulations as he shall prescribe, the Secretary of Defense with the approval of the President is authorized to transfer between the armed services, within the authorized commissioned strength of the respective services, officers holding commissions in the medical services or corps including the reserve components thereof. No officer shall be so transferred without (1) his consent, (2) the consent of the service from which the transfer is to be made, and (3) the consent of the service to which the transfer is to be made.

"(h) Officers transferred hereunder shall be appointed by the President alone to such commissioned grade, permanent and temporary, in the armed service to which transferred and be given such place on the applicable promotion list of such service as he shall determine. Federal service previously rendered by any such officer shall be credited for promotion, seniority, and retirement purposes as if served in the armed service to which transferred according to the provisions of law governing promotion, seniority, and retirement therein. No officer upon a transfer to any service from which previously transferred shall be given a higher grade, or place on the applicable promotion list, than that which he could have attained had he remained continuously in the service to which retransferred.

"(i) Any officer transferred hereunder shall be credited with the unused leave to which he was entitled at the time of transfer."

SEC. 4. Notwithstanding any other provision of law, where any person who served on active duty as a physician or dentist in the Armed Forces (including the Public Health Service) of the United States subsequent to September 16, 1940, thereafter has been, or shall be, recalled to active duty as a physician or dentist in the Armed Forces (including the Public Health Service) of the United States, such person may, under regulations prescribed by the President, be promoted to such grade or rank as may be commensurate with his medical or dental education, experience, and ability.

SEC. 5. No person inducted under the provisions of this Act shall be entitled to the benefits of the provisions of section 203 of Public Law 351, Eighty-First Congress.

SEC. 6. For the purposes of this Act, the term "allied specialist categories" shall include, but not be limited to, veterinarians, optometrists, pharmacists, and osteopaths.

SEC. 7. This Act, except for section 2 and section 5, shall terminate on July 9, 1951.

Approved September 9, 1950.

Public Health Service

Rotating Internships

The Public Health Service is offering 122 approved one-year rotating internships in eleven of its U. S. Marine Hospitals to begin July 1, 1951. These internships are open to graduates of approved medical schools. Appointments are made on a competitive basis according to the Uniform Intern Placement Plan. Successful applicants must qualify for a commission as Assistant Surgeon in the Reserve Corps of the Public Health Service and express intent to serve an additional year with the Public Health Service after completion of the internship. There are many and various opportunities in the Public Health Service in practically all fields of medicine, including clinical care of patients, research, preventive medicine and public health. In addition, the service is the medical corps for the U. S. Coast Guard and supplies officers to the Point IV Program. Applications must be filed by December 19. Information may be obtained from the Public Health Service, Federal Security Agency, Washington 25, D. C., Attention: Chairman, Committee on Residencies and Internships.

Research on Kidney Function

Dr. Robert W. Berliner, assistant professor of medicine at Columbia University, has been appointed chief of the Laboratory and Clinical Section on Kidney and Electrolyte Metabolism of the National Heart Institute. He will be in charge of research on kidney function and its relation to the development of heart failure. Under investigation will be the salt and water balance of the body and the hormonal factors which control this balance. At Columbia University Dr. Berliner directed a group of investigators in studies on kidney function and the effect of pituitary adrenocorticotropic hormone (ACTH) on this function. Prior to this, he was a research assistant at the Goldwater Memorial Hospital.

High Incidence of Trichinosis

The United States has the world's highest incidence of trichinosis, according to a statement made at a conference of public health veterinarians held in Atlanta, Ga., Aug. 12-18. Dr. James H. Steele, chief, Veterinary Public Health Services, Communicable Disease Center of the Public Health Service, stated, "One study of hundreds of Americans showed that 18 per cent of them had at some time during their lives been infected with trichinosis." He urged the veterinarians to do all they can to discourage feeding of raw garbage to hogs. If hog-feeding is used as a method of garbage disposal, he added, there should be a law requiring that the garbage be cooked.

Seminar for Statisticians

An Inter-American Seminar for Biostatisticians is being held in Santiago, Chile, from September 25 to December 15. It is a cooperative project of the government of Chile, the United Nations Statistical Office, the Economic Commission for Latin America, the World Health Organization, the Pan American Sanitary Bureau, the Inter-American Statistical Institute and the National Office of Vital Statistics of the U. S. Public Health Service. The seminar was organized to assist the governments of South America in developing more adequate statistical systems. In addition to lectures and discussion groups and the interchange of technical knowledge in vital and health statistics, training will include field trips, laboratory working groups and study of the statistical operations in agencies of the Chilean government. Among the instructors are Nora Powell and Octavio Cabello of the United Nations statistical office; Jose Janer, chief of the vital statistics office in Puerto Rico, representing the World Health Organization; Juan Alejandro Nimo, specialist in statistical education, representing the Inter-American Statistical Institute, and Charles G. Bennett, consultant on vital and health statistics of the U. S. National Office of Vital Statistics.

Fellowship Grants

Some 89 students in 20 states, Denmark and England will be aided in continuing their scientific studies because of recent Public Health Service fellowship grants amounting to $26,700. These fellowships were awarded on the recommendation of the fellowship boards of the six National Institutes of Health (for Heart, Cancer, Mental Health, Experimental Biology and Medicine, Microbiology and Dental) and with the approval of Dr. Leonard A. Scheele of the Public Health Service. The present awards bring the total this year to 469. The fellows are pursuing their studies in 108 institutions in 29 states, the District of Columbia and five foreign countries. These awards, Dr. Scheele pointed out, are made only to the most promising scholars in medical and related research fields. The average scholastic standing of fellows, since the inception of the Public Health Service fellowship program in 1944, places them in the upper 10 per cent of their classes.

The fellowships fall mainly into three stipend groups: (1) those with a bachelor's degree who receive $1,200 yearly, plus $400 for dependent(s), (2) those with a master's degree who receive $1,600 yearly, plus $400 for dependent(s), and (3) those with a doctor's degree who receive $3,000 yearly, plus $600 for dependent(s).

MEDICAL NEWS

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

COLORADO

Annual Harvard Lecture.—The third annual Harvard Lecture will be delivered by Dr. James H. Means, Jackson Professor of Clinical Medicine at Harvard Medical School and physician in chief at the Massachusetts General Hospital, Boston, October 27 at 5:00 p. m. in the Denison Auditorium of the University of Colorado Medical Center, Denver. Dr. Means will speak on "Integrative Action of the Endocrine System." Physicians, medical students, nurses and others interested are cordially invited.

Director of State Mental Hygiene.—Dr. Laurence M. Fairchild, for three years a resident physician in psychiatry at the University of Colorado Medical Center, Denver, has been appointed director of the State Health Department Mental Hygiene Section. He will work with the University of Colorado Medical Center and the State Department of Health in the field of clinical psychiatry. A study of Colorado mental institutions was begun this month by Dr. Riley H. Guthrie, psychiatrist of the U. S. Public Health Service, Washington, D. C., and Miss Ruth Corcoran, psychiatric nurse. The survey which was approved by Governor Johnson and the state board of health was required by the institutions.

GEORGIA

Annual Obstetric Seminar.—The annual Obstetric Seminar will be held November 13-17 at the Medical College of Georgia, Augusta, under the auspices of the divisions of maternal and child health of the state boards of health of Georgia, Florida and South Carolina. The speakers will include 19 specialists certified by the American Board of Obstetrics and Gynecology.

ILLINOIS

Adams County Centennial Celebration.—A cast of more than 300 persons will present a pageant for three nights, October 14-16, in the Quincy Baseball Stadium as the highlight of the celebration of the one hundredth anniversary of the Adams County Medical Society. This cavalcade, to be called "A Century of Health Progress," will dramatize medical discoveries and certain chapters in Quincy's history, such as the great cholera epidemic of 100 years ago. Under the direction of Dr. Carl W. Hagler, research has been done to establish absolute accuracy of the historical events. The pageant is under professional direction. The four day celebration will include a parade on October 14 in downtown Quincy with more than 25 floats and nine bands. Dr. Milton E. Bitter, Quincy, is parade chairman. Every physician in the city is working on one committee or another. The county society is underwriting the cost. On October 13 the physicians, their wives and guests will meet for a banquet. In the Hall of Science, housed in a tent 350 feet long, will be exhibits from the County Health Department, the County Medical Society, American Cancer Society, American Heart Association, American Medical Association, American Red Cross, State Commission for Handicapped Children, State Dental Society, State Medical Society, State Tuberculosis Society, National Foundation for Infantile Paralysis, Quincy and Adams County Hearing Conservation Program for School Children and the Quincy Dental Study Club. Admission to the hall will be free, and those attending will receive free roentgen examinations of the chest, dental roentgenograms, blood pressure tests and hearing tests with an electric audiometer.

Chicago

Personal.—Dr. Manuel E. Lichtenstein, professor of surgery, Northwestern University Medical School, was a guest of the University of Brazil, Rio de Janeiro, August 13-28. The degree "Doctor Honoris Causa" was conferred on him. He gave a series of lectures before the University Medical School and Brazilian medical societies.

First Sheinin Lecture.—Dr. Robert E. Gross, surgeon in chief of Children's Hospital, Boston, will speak on "Heart Diseases" at the first annual lecture established in honor of Dr. John J. Sheinin, president of the Chicago Medical School, by Beta Tau Chapter, Phi Delta Epsilon. The lecture will be held on October 16 at 7:30 p. m., in the Kling Auditorium of Mount Sinai Hospital, 15th Place and California Avenue.

Mercy Hospital Alumni Association.—The Mercy Hospital Internes and Residents Alumni Association will held its annual meeting on October 14. A scientific program will be presented in the amphitheater of the hospital followed by a luncheon in the hospital dining room. An informal dinner-dance at the Blackstone Hotel starting at 6:00 p. m. will climax the day.

Sunday Afternoon Lectures.—The Museum of Science and Industry will present a series of five lectures to be given Sunday afternoons in October at 3:00 p. m. The program is as follows:

Oct. 1, Francis J. Gerty, Chicago, Personality Traits.
Oct. 8, David Slight, Chicago, Headaches, What to Do.
Oct. 15, Noah D. Fabricant, Chicago, Catching up with the Common Cold.
Oct. 22, Sinclair H. Armstrong Jr., Chicago, Arthritis.
Oct. 29, Arthur R. Colwell, Evanston, Ill., Types of Diabetes Mellitus and Treatment.

Belfield Memorial Lecture.—The annual William T. Belfield Memorial Lecture of the Chicago Urological Society will open this year's meetings October 26. Dr. Robert H. Herbst, Chicago, will speak on "Personal Reminiscences of Dr. William T. Belfield." Dr. Herman A. Kretschmer will speak on "History of Urology in the Midwest." The morning program will be given by members of the urological staff of Cook County Hospital. This year's meetings of the society are to be held at the Congress Hotel.

Medical Society Postgraduate Courses.—Two postgraduate courses will be presented by the Chicago Medical society at Thorne Hall, Lake Shore Drive and Superior Street, this fall. "Diseases of the Gastrointestinal Tract, Liver and Pancreas" will be given October 23-27 and "Diseases of the Heart, Kidneys and Blood Vessels" October 30 to November 3. The visiting faculty includes:

Stewart G. Wolf Jr., New York, Gastric Changes during Conscious and Unconscious Conflicts.
Sara M. Jordan, Boston, Complicated Peptic Ulcer.
John M. Waugh, Rochester, Minn., Peptic Ulcer: Indications for Surgery and Selection of Operation.
George B. Eusterman, Rochester, Minn., The Liver, Gallbladder and Biliary Ducts—Appraisal of Newer Developments.
Robert Elman, St. Louis, Massive Upper Gastrointestinal Hemorrhage.
John H. Fitzgibbon, Portland, Ore., Hiatus Hernia.
Walter C. Alvarez, Rochester, Minn., Pains in Thorax and Abdomen Due to Fibrositis.
Charles W. Mayo, Rochester, Minn., Ulcerative Colitis.
Russell S. Boles, Philadelphia, Drugs in the Treatment of Gastrointestinal Disorders.
Leon Schiff, Cincinnati, Clinical Value of Needle Biopsy of the Liver.
Robert L. Levy, New York, Acute Coronary Insufficiency: Diagnosis and Treatment.
Irving S. Wright, New York, Observations Regarding Neurovascular Syndromes of the Shoulder Girdle.
A. Carlton Ernstene, Cleveland, Management of Cardiac Emergencies.
William B. Kountz, St. Louis, Electrocardiographic Changes in Aging.
William H. Bunn, Youngstown, Ohio, Pulmonary Complications of Heart Disease.
Edgar A. Hines Jr., Rochester, Minn., Diagnosis and Treatment of Peripheral Vascular Diseases.
Eugene A. Stead Jr., Durham, N. C., Pulmonary Embolism and Infarction.
Francis D. Murphy, Milwaukee, Malignant Hypertension: A Clinical and Pathological Study.
Harris B. Shumacker Jr., Indianapolis, Surgical Treatment of Coarctation of the Aorta.
Peter H. Forsham, Boston, Clinical Use of ACTH and Cortisone.
William Parson, Charlottesville, Va., Metabolic Bone Disease Associated with Renal Impairment.
Howard B. Burchell, Rochester, Minn., Effect of Cortisone in Rheumatic Fever.
Howard B. Sprague, Boston, Treatment of Cardiac Emergencies.

The registration fee for each course is $50. The minimum registration is 50 and the maximum 100.

INDIANA

Military Manpower Committee.—The Indiana State Medical Association has appointed a Military Manpower Committee comprising Dr. Cyrus J. Clark of Indianapolis, chairman, Drs. Hubert M. English of Gary, Herman T. Combs of Evansville, Carl G. Miller of Fort Wayne, Gayle J. Hunt of Richmond and Norman R. Booher and Charles F. Thompson of Indianapolis. Each county medical society is creating similar committees to cooperate with military authorities in supplying physicians for military service. Twenty-four Indiana reserve medical officers already have received orders.

IOWA

Dr. Elkins to Direct Laboratory.—Dr. Higdon B. Elkins has been appointed chairman of a cancer research committee at the State University of Iowa, Iowa City, and director of a new cancer research laboratory there. Dr. Elkins is assistant professor of radiology at the university.

Trudeau Society Organized.—At a breakfast meeting May 19 at the Savery Hotel the Iowa Trudeau Society was organized, with Dr. Walter L. Bierring, state health commissioner, as honorary president. Officers elected for the coming year are Drs. Leon J. Galinsky, Des Moines, president; Felix A. Hennessy, Calmar, vice president, and Arthur C. Wise, Oakdale, secretary-treasurer.

Society News.—The ninety-seventh anniversary meeting of the Dubuque County Medical Society was held September 12 in Dubuque. Dr. R. Charles Adams of the department of anesthesiology, Mayo Clinic, Rochester, Minn., spoke on "General Aspects of Anesthesia as They Pertain to the General Practitioner." After the dinner Dr. Raymond J. Jackman of the department of proctology of Mayo Clinic spoke on "Common Anorectal Lesions That Confront the General Practitioner."—— The Linn County Medical Society will meet October 12 at the Hotel Montrose in Cedar Rapids. Barry J. Anson, Ph.D., Northwestern University, Chicago, will speak on "The Great Plague of London." This will be the Doctors and Wives Program.

KANSAS

Fall Clinical Conference.—Kansas City Southwest Clinical Society will present its annual Fall Clinical Conference at the Municipal Auditorium, Kansas City, October 2-5. Guest speakers include:

Irving S. Wright, New York, Modern Treatment of Coronary Thrombosis.
Herman E. Pearse, Rochester, N. Y., Practical Considerations of Biliary Surgery.
Paul R. Cannon, Chicago, Clinical Lessons Learned in the Morgue.
Charles L. Martin, Dallas, Texas, X-ray Diagnosis of Peptic Ulcer.
Elmer Hess, Erie, Pa., Urological Hints for the General Practitioner.
F. Bayard Carter, Durham, N. C., Indications for Cesarean Section.
Brian B. Blades, Washington, D. C., Pulmonary Lesions Amenable to Surgery.
William L. Bradford, Rochester, N. Y., Infection of the Newborn.
Arthur Grollman, Dallas, Texas, Clinical Use of Antibiotics.
Mr. Clem Whitaker and Miss Leone Baxter, Chicago, The Citizen-Physician: His Position Today.
Edward W. Boland, Los Angeles, Relation of the Adrenal Cortex to Rheumatic Disease.
Francis E. Senear, Chicago, Eczematoid Conditions of the Hands.
Joseph S. Barr, Boston, Bursitis: Acute, Subacute and Chronic.
Dwight L. Wilbur, San Francisco, Management of Gastrointestinal Bleeding.
E. Alton Ochsner, New Orleans, Venous Thrombosis.
Edwin N. Broyles, Baltimore, Clinical Significance of Hoarseness.

Round-table luncheons and sectional lecture groups are scheduled. Scientific and technical exhibits will be shown. A social program has been planned for the women.

MICHIGAN

Michigan Promotions.—The University of Michigan Medical School has announced the promotions of the following men to associate professors in their respective departments: Dr. Alexander Barry, Ph.D., anatomy; Dr. Robert C. Bassett, surgery in the division of neurosurgery; Dr. Robert W. Buxton, surgery, and Dr. Joseph P. Chandler, Ph.D., and Raymond L. Garner, Ph.D., biologic chemistry.

New Assistant Dean.—Dr. Rudolf J. Noer has been named assistant dean of the Wayne University College of Medicine by the Detroit Board of Education. Dr. Noer came to Wayne from the faculty of the University of Wisconsin in 1937 and advanced through academic ranks to a professorship, which he will continue to hold with the assistant deanship. Since 1947 he has been a member of the University Council as a representative of the College of Medicine. Dr. Noer served overseas during World War II with Wayne's affiliated hospital unit, the 36th General Hospital, first as assistant chief of surgery and later as executive officer.

MISSOURI

Dr. Edward Dempsey Heads Department of Anatomy.—Edward W. Dempsey, Ph.D., since 1946 associate professor of anatomy in the Harvard Medical School, Boston, has been appointed professor and head of the department of anatomy, Washington University School of Medicine, St. Louis. He succeeds Edmund V. Cowdry, Ph.D., who has held both posts since 1941 and now will devote his full time to the directorship of a cancer research laboratory, established a year ago with a $435,000 bequest from Mrs. Emma Jorgensen Wernse. Dr. Dempsey has been a National Research Council Fellow and has also taught at Stanford University School of Medicine, San Francisco, and at Long Island College of Medicine, Brooklyn. Dr. Cowdry, who will remain a member of the department of anatomy, has been on the medical school staff since 1928 and was director of research at Barnard Free Skin and Cancer Hospital from 1939 to 1948. The cancer research unit will move to the fourth floor of the new Cancer Research Building.

NEBRASKA

Hospital News.—Gothenburg Memorial Hospital was dedicated June 23. It is a community hospital, has 26 beds and 12 bassinets and is valued at $150,000. It was built without federal aid.

Omaha Mid-West Clinical Assembly. — The annual assembly of the Omaha Mid-West Clinical Society will be held at the Hotel Paxton, Omaha, October 23-27. Speakers not from the Midwest include:

Angus D. McLachlin, London, Ontario, Canada, Surgical Aspects of Diabetes.
Donald M. Pillsbury, Philadelphia, New Types of Contact Dermatitis.
Edward B. D. Neuhauser, Boston, Radiological Diagnosis of Congenital Abnormalities of the Gastrointestinal Tract in Infants.
J. Burns Amberson, Jr., New York, Application and Limitations of Antibiotic Therapy in the Treatment of Certain Chronic Pulmonary Diseases.
Franklin G. Ebaugh, Denver.
Nicholson J. Eastman, Baltimore, Choice of Anesthesia During Labor.

Panel discussions will be presented late Tuesday morning on jaundice, new drugs and functional and organic disorders of the colon and on Thursday morning on management of advanced malignancy, gastrointestinal symptoms due to extrinsic organic causes and obstetric problems. On Friday morning at 9:00 there will be a discussion on antibiotics, the participants being Drs. William A. Altemeier, Cincinnati; Wallace E. Herrell, Rochester, Minn.; William M. M. Kirby, Seattle, and John F. Waldo, Salt Lake City. On Thursday evening the Omaha Douglas County Medical Society Program will be presented. Dr. Austin Smith, Editor of THE JOURNAL, will speak on "Trends in Medical Practice and Their Related Problems."

NEVADA

State Medical Meeting in Las Vegas.—The Nevada State Medical Association will hold its annual meeting in Las Vegas October 5-7 with headquarters at the War Memorial Building, under the presidency of Dr. David E. Hemington of the city. Out of state speakers include:

Donald G. Tollefson, Los Angeles, Are There Too Many Cesarean Sections?
Francis M. McKeever, Los Angeles, Amputations in the Lower Extremity.
Elmer Belt, Los Angeles, Carcinoma of the Prostate.
Travis Winsor, Los Angeles, Diagnosis and Treatment of Peripheral Vascular Disease.
Jack M. Farris, Los Angeles, Fundamental Principles and Recent Trends in the Surgical Treatment of Cancer.
Lowell A. Rantz, San Francisco, Collagen Vascular Diseases.
Clyde K. Emery, Los Angeles, Treatment of Tumors.
Arthur E. Smith, Los Angeles, Reconstructive Plastic Maxillofacial and Oral Surgery.
Clement J. Molony, Los Angeles, Recent Advances in Treatment of Erythroblastosis.
Howell S. Randolph, Phoenix, Ariz., Masquerades of Pulmonary Malignancies.
Aidan A. Raney, Los Angeles, Diagnostic Methods in Brain Surgery.

The banquet, to be followed by dancing, will be held at the Hotel Flamingo Thursday evening at 7:30. The Woman's Auxiliary will meet in conjunction with the association.

NEW YORK

Personal.—The Greek Embassy in Washington has accepted the services of Dr. Morton I. Berson to perform operations on maimed Greek war veterans and to demonstrate various technics in reconstructive surgery in Greece. Dr. Berson will also lecture and demonstrate surgical technic in Ankara, Turkey, at the invitation of the Medical Faculty of the University of Ankara.

Advanced Course for Physical Therapists.—The Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center will present a four weeks' advanced course in physical rehabilitation methods for physical therapists three times during the coming school year. The dates are November 27 to December 22, Jan. 8 to Feb. 2, 1951 and April 9 to May 4, 1951. The course is divided into three sections: (1) Severe disabilities and their rehabilitation, (2) Skills and methods of functional activities and (3) Clinical experience. The tuition fee is $62 and registration $3. Qualified veterans may enrol in the course under the provision of P. L. 346 or P. L. 16. Applications and requests for further information may be submitted to Miss Edith Buchwald, director of rehabilitation courses for physical therapists, Institute of Physical Medicine and Rehabilitation, 325 East 38th Street, New York 16.

New York City

Cerebral Palsy Institute.—A two week institute in cerebral palsy beginning November 6 for qualified physicians and nurses, and for physical, occupational and speech therapists, social service and guidance workers and teachers will be given by the Coordinating Council for Cerebral Palsy in New York. The institute will include lectures, clinical demonstrations and seminars. A faculty of physicians and professional personnel, authorities in their individual fields, will participate. After the institute opportunities for a three month inservice training course will be available to a limited number of physicians and therapists. Information may be obtained from Miss Marguerite Abbott, Executive Director of the Council, 270 Park Avenue, New York 17.

Hospital Facilities Expanded.—To help meet the increased demands for ancillary facilities and patient service, Roosevelt Hospital has reconstructed the fifth floor of the ward pavilion. The semiprivate section located on the southern half of the floor contains 17 beds. At the average patient stay of 13 days this means that 488 more patients can be admitted yearly. The patient accommodations are arranged in one, two, three and four bed units and have been completely redecorated and refurnished. The northern half of the floor provides the additional diagnostic facilities needed to relieve the severely taxed ancillary services in other sections of the hospital. The diagnostic facilities include provisions for x-ray, basal metabolism, electrocardiography and a small laboratory. Suitable waiting rooms, consultation offices and examining rooms have been provided to assist the patients and professional staff using these facilities. The $190,000 project was open for patients early in August.

OHIO

County Society Foundation.—The Mahoning Medical Service Foundation comprises all members of the Mahoning County Medical Society and is administered by a board of directors of physicians and lay members. It proposes to make grants for educational, medical and other worthy purposes in the community with the money collected from the county commissioners for the professional care of indigent patients in local hospitals. Its first awards made recently were in the form of six regular nurses scholarships and two scholarships for nurses taking a combined five-year program at Youngstown College. Dr. Edward J. Reilly, Campbell, is president of the board of directors.

WHO Project in Iraq.—Dr. E. Herndon Hudson, director of the Ohio University Health Service at Columbus since 1940, has been named director and chief medical adviser of a United Nations World Health Organization project in Iraq, starting October 1. He has been given a year's leave of absence from his university post. The project, which will concern the study and treatment of bejel in Iraq, a disease prevalent among children in that country, is sponsored jointly by the World Health Organization and the Iraq government at a cost of $250,000, with the United Nations International Children's Emergency Fund furnishing the medical supplies and equipment. The Iraq government is furnishing a trailer, outfitted so that Dr. Hudson may make a self-sustaining expedition into the desert area. It is planned to examine and test up to 70,000 persons in the course of a year and to establish treatment and control procedures that may be continued later by the government. Dr. Hudson has had 12 years' previous experience in medical work among the Arabs and Bedouins of the Euphrates area. He was an instructor at the American University in Beirut, Lebanon, 1911-1914, was superintendent of the Lebanon, Syria, Tuberculosis Hospital in 1923 and the following year was professor of medicine at Beirut university. He founded and directed the Presbyterian Medical Center at Deir-ez-Zor, Syria, from 1924 to 1936. In 1940 he joined the faculty of Ohio University at Columbus. During World War II he directed teaching and research in tropical diseases at the National Naval Medical Center at Bethesda, Md., and spent two periods of service at Pearl Harbor.

OKLAHOMA

Course in Traumatic Surgery.—A postgraduate course in traumatic and disaster surgery will be given in the School of Nursing at the University of Oklahoma in Oklahoma City October 2-4. Guest instructors will be Lieut. Col. Michael D. Buscemi and Capt. Meredith Mallory, Jr., Fort Sam Houston, Texas; Dr. Oscar P. Hampton Jr., St. Louis; Dr. John E. McDonald, Tulsa; Donald G. Nelson, Washington, D. C.; Dr. Howard E. Snyder, Winfield, Kan., and Dr. Edwin G. Williams, Washington, D. C. Wednesday morning's program is also a part of a Symposium on Civilian Preparedness for Disaster being presented at the School of Medicine Auditorium October 4-5. This is an orientation course intended to present basic facts in handling casualties of any sort, with emphasis being placed on radiation injuries for those personally concerned with public health and joint community welfare. No fee will be charged. Fee for the postgraduate course is $15. Registration and all communications should be sent to the Office of Postgraduate Instruction, University of Oklahoma School of Medicine, 800 Northeast 13th Street, Oklahoma City 4. Both programs are being sponsored by the Oklahoma State Department of Health, Oklahoma State Medical Association, the department of surgery and the Division of Postgraduate Instruction of the University of Oklahoma School of Medicine, Oklahoma City.

OREGON

Sommer Memorial Lectures.—The twelfth series of Sommer Memorial Lectures will be delivered October 4, 5 and 6 at St. Vincent's Hospital in Portland, two being given each day, the first at 1:00 p. m. and the second at 8:00 p. m. The lectures on October 4 are by Louis H. Clerf, Philadelphia, "The Esophagus and Its Diseases," and Sir Geoffrey Jefferson, Manchester, England, "Pituitary Infantilism"; on October 5, Sir Geoffrey, "Intracranial Hemorrhage in the Young," and Dr. Clerf, "Bronchoscopy in Bronchopulmonary Disease," and on October 6, Dr. Clerf, "Clinical Significance of Hoarseness," and Sir Geoffrey, "The Anatomy of the Soul." These lectures were made possible by a perpetual endowment fund established by the late Dr. Ernst A. Sommer of Portland. Admission is without charge to all members of the medical profession and to students attending an accredited medical school.

PENNSYLVANIA

University Course in Cancer.—During the coming school year the University of Pennsylvania will conduct three courses in the diagnosis and treatment of cancer. The Cancer Control Division of the Pennsylvania Department of Health will pay the tuition of each registrant and will provide $200 for living expenses. Each course will be two weeks long and will consist of lectures, panel discussions and clinical demonstrations. Four evening lectures will be given by outstanding authorities in the field of cancer from various parts of the country. The dates for the courses are October 23 to November 4, Jan. 22 to Feb. 3, 1951, and April 9 to 21, 1951. Each class is limited to 15. Application blanks may be secured from the secretary of the Cancer Commission of the University of Pennsylvania, Hospital of the University, 3400 Spruce Street, Philadelphia.

Centennial Session of State Medical Society.—The Medical Society of the State of Pennsylvania will hold its hundredth annual session at Convention Hall in Philadelphia October 16-19 under the presidency of Dr. E. Roger Samuel, Mount Carmel. Guest speakers include:

Charles S. Davidson, Boston, Internist's View of the Treatment of Liver Disease.
Robert R. Linton, Boston, Surgical Management of Hepatic Cirrhosis.
William A. Altemeier, Cincinnati, Present Status of Antibiotic and Chemotherapeutic Agents in Surgery.
Irving S. Wright, New York, Use and Abuse of Anticoagulant Drugs.
Richard H. Overholt, Boston, Benefits of Surgery in Pulmonary Tuberculosis.
Burrill B. Crohn, New York, Medical Aspects of Regional Ileitis.
Richard B. Cattell, Boston, Surgical Aspects of Ulcerative Colitis and Regional Enteritis.

The programs of the general sessions are built around symposiums, the subjects being hepatic cirrhosis, antibiotics and chemotherapeutic agents, peripheral vascular diseases, pulmonary tuberculosis, phases in the management of malignancy and ulcerative lesions of the bowel. There will be section meetings on medicine and surgery. Study Clubs meeting Thursday afternoon will deal with obstetrics and gynecology, ophthalmology and otorhinolaryngology, pediatrics, nervous and mental diseases, pathology and radiology, preventive medicine and public health, general practice and dermatology. A three day program of color television showing varied medical and surgical technics will be transmitted from the Hospital of the University of Pennsylvania direct to Convention Hall. Smith, Kline & French Laboratories are sponsoring the program. The state dinner will be held Monday evening. The Woman's Auxiliary will meet in conjunction with the state society with headquarters at the Bellevue-Stratford Hotel.

TEXAS

New Cerebral Palsy Clinic.—The Dallas Society for Crippled Children will build a cerebral palsy clinic on a lot recently donated to the society in downtown Dallas. The gift from several anonymous donors will permit the society to erect a larger building, for which they have $50,000 in the building fund. The Dallas society is now treating 400 children without charge at the cerebral palsy center and about 50 at the speech center, which will be included in the new building. Dr. Margaret Watkins heads the 14 member medical staff.

Coordinate Research Studies.—To coordinate research studies on medical aspects of radioactive material at the University of Texas Medical Branch, Galveston, a committee has been appointed comprising Dr. Truman G. Blocker Jr., professor of plastic surgery, chairman; Dr. Frank M. Townsend, associate professor of pathology; Dr. Edgar J. Poth, professor of surgery; Kenneth P. McConnell, Ph.D., director of the laboratory of medical physics, and Dr. William C. Levin, assistant professor of internal medicine and director of the Hematology Research Laboratory. The committee will assist in the administration of grants for research on radioactive substances and will aid in the promotion of seminars and meetings to consider recent developments in radiobiology and medicine.

University to Open Postgraduate School.—The Board of Regents of the University of Texas at their July 14 meeting approved the activation of a branch of the Postgraduate School of Medicine of the university. The new division will be established in San Antonio through the cooperation of the San Antonio Medical Foundation, the University of Texas and the Bexar County Medical Society. The San Antonio center will be under the direction of the dean of the Postgraduate Medical School in Houston, Dr. R. Lee Clark Jr., who is also director of the university's M. D. Anderson Hospital for Cancer Research. The new branch will be directly supervised by its own assistant dean, General James A. Bethea. Dr. Bethea was formerly chief surgeon in the Japanese area on General MacArthur's staff. The plans are for this center to be a pilot center, and that later other such teaching branches will be established in various urban areas of the state.

VIRGINIA

New Laboratory.—Construction has been started on an addition to the University of Virginia department of medicine, Charlottesville, which will provide additional laboratory space for the departments of biochemistry, pharmacology, physiology, pathology, microbiology, internal medicine and surgery as well as new classrooms and an auditorium to seat 240. The total project, including equipment, will cost about $950,000. Construction of a unit for cancer teaching and research, costing about $250,000, is also under way.

WEST VIRGINIA

Medical Advisory Board.—Dr. Henry M. Escue of Charleston has been named chairman of the state's new Workmen's Compensation Medical Advisory Board. The other members are Drs. Howard A. Swart and Russel Kessel, both of Charleston. The board will pass on complicated questions and interpret reports filed by medical examiners throughout the state. The appointments are for the year ending July 31, 1951.

State Diabetes Association Organized.—Dr. George P. Heffner of Charleston was elected president of the West Virginia Diabetes Association at the organization meeting held at White Sulphur Springs July 29; Drs. Oliver H. Brundage, Parkersburg, vice president; William M. Sheppe, Wheeling, president-elect; Richard V. Lynch, Clarksburg, secretary, and Richard N. O'Dell, Charleston, treasurer. Dr. Heffner has been serving as chairman of the diabetes committee of the West Virginia State Medical Association.

County General Practice Lectures.—A joint meeting of the West Virginia Academy of General Practice with the Harrison County Medical Society has been arranged for October 5 at the Clarksburg Country Club. The speakers will discuss obstetrics and neurosurgery. Another meeting sponsored by the academy will be held in Bluefield November 12. The Kanawha County meeting sponsored by the academy and the West Virginia Cancer Society is being held at Charleston. Drs. Gustavus A. Humphreys and Robert J. Booher, members of the staff of Memorial Hospital, New York, are the guest speakers. Dr. Humphrey's subject will be "Cancer of the Genitourinary Tract," and Dr. Booher's, "Cancer of the Gastrointestinal Tract."

WYOMING

State Medical Election.—At the meeting of the Wyoming State Medical Society in Cody in September the following officers were elected for the coming year: Dr. Karl E. Krueger, Rock Springs, president; Dr. Paul R. Holtz, Lander, president-elect; Dr. Edward J. Guilfoyle, Newcastle, vice president; Dr. Peter M. Schunk, Sheridan, treasurer; Dr. Glenn W. Koford, Cheyenne, secretary; Dr. Roscoe Reeve, Casper, delegate to the American Medical Association with Dr. Bernard J. Sullivan, Laramie, alternate delegate, and Arthur R. Abbey, Cheyenne, executive secretary.

GENERAL

Pathologists Meeting.—The annual meeting of the College of American Pathologists will be held at the Drake Hotel, Chicago, October 16-17, the second day's program being a joint meeting with the American Society of Clinical Pathologists. The program will open with a symposium on "The Pathologist's Role in Civilian Defense." The speakers will be Dr. Shields Warren, Boston; Col. Elbert DeCoursey, M.C., U. S. Army, Washington, D. C.; Dr. Sidney O. Levinson, Chicago; Dr. James C. Sargent, Milwaukee, and Dr. Victor H. Haas, Bethesda, Md. Other subjects under discussion include blood transfusion hazards, practice of pathology, laboratory diagnosis of tuberculosis and a hemoglobin symposium. The two societies will hold a joint banquet at 7:00 p. m. Tuesday and will hear Dr. Harold S. Diehl, dean of the University of Minnesota Medical School, Minneapolis, speak on "Some Lessons from Medical Education and the National Health Service in Britain."

Society Elections.—The Society for Investigative Dermatology at its last annual meeting elected the following officers for the coming year: Dr. Marion B. Sulzberger, New York, president; Dr. Nelson P. Anderson, Los Angeles, vice president; Dr. Herman Beerman, Philadelphia, secretary-treasurer, and Dr. Chester N. Frazier, Boston, director. At this meeting the society selected Atlantic City, N. J., as the place for its annual two day meeting in 1951.——The American Congress of Physical Medicine has elected the following officers for 1951: Dr. Arthur L. Watkins, Boston, president; Dr. Robert L. Bennett Jr., Warm Springs, Ga., president-elect; Dr. Richard Kovacs, New York, secretary; Dr. Frank H. Krusen, Rochester, Minn., treasurer; Dr. Walter J. Zeiter, Cleveland, executive director, and Marion G. Smith, Chicago, executive secretary. Dr. George M. Piersol of Philadelphia was appointed to serve a term of six years on the editorial board of the *Archives of Physical Medicine.*

Gastroenterological Association to Meet in New York.—The National Gastroenterological Association's annual convention will take place at the Hotel Statler, New York, October 9-11 and will be followed by a course in gastrointestinal surgery October 12-14. Those invited to present papers at the convention include:

Maurice Feldman, Baltimore, Unusual Forms of Perforation Complicating Benign Peptic Ulcer and Gastric Carcinoma.
Fernando Milanes, Leon Blanco P., and A. Causa, Havana, Cuba, Jejunum Histopathological Studies Through Surgical Biopsy in a Case of Active Tropical Sprue.
Edward F. Lewison, Baltimore, Bleeding Peptic Ulcer.
Stuart W. Harrington, Rochester, Minn., Surgical Treatment of Congenital Types of Diaphragmatic Hernia.
Vincent T. Young, Washington, D. C., Results of Routine Sigmoidoscopy.

Thirty-three officers of instruction will present the course following the meeting. There will be scientific and technical exhibits.

Central Neuropsychiatric Association.—This association will hold its annual convention October 13-14 at the Hollenden Hotel in Cleveland under the presidency of Dr. Thomas J. Heldt, Detroit. Invited speakers include:

Alfred K. Bochner, Douglas D. Bond, Ralph I. Dorfman, Ph.D., and William K. Jefferies, Cleveland, Pituitary Adrenocortical Responses in Normal and Psychotic Subjects.
Maurits Katan, Cleveland, Prepsychotic Phase of Schizophrenia.
Joseph M. Hayman, Jr., Cleveland, Porphyria.
Alan R. Moritz, Cleveland, Postmortem Investigation of Victims of Sadistic Homicide.
Edward O. Harper and Paul A. Mattis, Sc.D., Cleveland, Comparison of the Uptake of Radioactive Thyroxine by the Tuber Cinereum, Hypophysis and Thyroid.
A. Peck Gilger, Albert M. Potts and Lorand V. Johnson, Cleveland, Effect of Anticonvulsant Drugs on Retinal Metabolism.
Siegfried Baumeil, Cleveland, Syndrome of the Posterior Inferior Cerebellar Artery and Variations in Its Clinical Picture.
Andre A. Weil, Cleveland, and Edward Marsh, B.E.E., Non-Sleep Electroencephalogram Activation (A Critical Appraisal with Description of New Apparatus for Photic Driving).

The annual dinner and business meeting will be held Friday evening at 7:15 p. m.

Anniversary Volume.—*Experimental Medicine and Surgery* for May, August and November, 1950, is an anniversary volume published in honor of Dr. Bruno Z. Kisch, New York, on his sixtieth birthday. Dr. Kisch was appointed to one of the two chairs of physiology at the University of Cologne at the age of 34 and became head of the department of physiology in 1924. He was particularly interested at that time in the problems of cardiovascular physiology. A victim of the Nazi regime, he eventually came to New York to make his home. Dr. Albert Schweitzer, London, England, who wrote the foreword to the volume, says, "Apart from many publications on clinical and human electrocardiographical problems, two important contributions to experimental medicine may be mentioned: his successful studies in collaboration with Nahum and Hoff of the con-

figuration of the action potentials in different parts of the cardiac muscle and his discovery of a procaine-esterase in the blood and various organs of man and other species. . . . He founded the Z. Kreislauff and Ergebn. Kreislauff., Cardiologia. and 'Exper. Med. and Surg.' He started the German Cardiological Society. . . ."

Rehabilitation Association Conference.—The twenty-fifth anniversary conference of the National Rehabilitation Association will convene at the Hotel Statler, New York, October 24-26, under the presidency of L. B. Harmon, Salt Lake City. The sessions' committees have chosen the following topics for discussion.

The Emotionally Ill, Mr. Luther E. Woodward, New York State Department of Mental Hygiene, New York, chairman.
The Industrially Injured, Mr. Kenneth E. Pohlmann, United Mine Workers of America, Welfare and Retirement Fund, Washington, D. C., chairman.
Rehabilitation Centers, Mr. George F. Moore Jr., Providence, R. I., chairman.
Inhospital Rehabilitation, the Homebound and Sheltered Workshops, Mr. Edgar B. Porter, Office of Vocational Rehabilitation, Washington, D. C., chairman.
Amputees, Jerome Lawrence, Veterans Administration, New York, chairman.
The School Child, Frank J. O'Brien, Orthopedic Advisory Committee, New York, chairman.
The Blind, Mr. George F. Meyer, Service for the Blind, New Jersey, chairman.
Medical Sessions, Ephraim M. Bluestone, Montefiore Hospital for Chronic Diseases, New York, chairman.

The annual banquet will be held at 6:30 p. m. October 23.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the National Office of Vital Statistics, U. S. Public Health Service.

	Week Ended		Total*		5-Year Median, 1945-1949
	Sept. 16, 1950	Sept. 17, 1949	1950	1949	
United States Total	2,138	2,682	16,236	28,157	15,313
New England States:					
Maine	10	50	44	358	29
New Hampshire	4	16	11	147	20
Vermont	3	12	17	88	16
Massachusetts	62	165	228	1,241	181
Rhode Island	2	17	27	94	29
Connecticut	51	56	233	387	84
Middle Atlantic States:					
New York	377	354	1,875	3,783	775
New Jersey	81	127	421	869	435
Pennsylvania	112	64	684	478	435
East North Central States:					
Ohio	126	146	654	1,210	590
Indiana	33	68	199	811	205
Illinois	117	196	806	2,115	616
Michigan	135	206	747	1,963	391
Wisconsin	62	64	302	648	284
West North Central States:					
Minnesota	45	150	253	1,318	665
Iowa	104	64	672	819	341
Missouri	26	60	187	1,042	178
North Dakota	..	35	22	395	85
South Dakota	6	23	69	249	158
Nebraska	25	46	235	388	340
Kansas	43	51	364	519	198
South Atlantic States:					
Delaware	2	3	21	36	36
Maryland	79	3	278	114	61
District of Columbia	7	8	117	66	66
Virginia	84	26	751	227	227
West Virginia	10	18	191	264	57
North Carolina	23	10	477	147	81
South Carolina	22	9	322	68	68
Georgia	33	8	208	134	107
Florida	27	14	205	160	160
East South Central States:					
Kentucky	45	32	417	418	76
Tennessee	32	27	345	382	260
Alabama	8	17	200	175	142
Mississippi	12	11	238	248	112
West South Central States:					
Arkansas	21	25	205	805	112
Louisiana	16	22	239	168	94
Oklahoma	22	50	374	1,000	271
Texas	72	92	1,803	1,695	772
Mountain States:					
Montana	..	7	21	52	33
Idaho	12	21	55	332	63
Wyoming	3	7	31	83	65
Colorado	4	54	100	457	92
New Mexico	9	16	64	130	54
Arizona	12	1	78	102	91
Utah	3	18	25	124	69
Nevada	1	..	4	11	3
Pacific States:					
Washington	24	39	260	336	175
Oregon	25	27	184	134	82
California	106	127	976	1,277	1,277

* Beginning with the twelfth week of each year.

International College of Surgeons.—The U. S. Chapter of the International College of Surgeons will hold its annual assembly at the Public Auditorium in Cleveland, Ohio, October 31-November 3, under the presidency of Dr. Custis Lee Hall, Washington, D. C. Guest speakers presenting papers include:

Normand L. Hoerr, Cleveland, Surgical Anatomy of the Stomach.
Ewald E. Selkurt, Ph.D., Cleveland, Physiology of the Stomach.
James W. Reagan, Cleveland, Surgical Pathologic Lesions of the Stomach.
Hymer L. Friedell, Cleveland, Upper Gastrointestinal Tract Lesions as Found by Roentgen Examinations.
Robert A. Wise, Portland, Ore., Gastric Polyps.
F. J. Dean Sauer, St. Louis, Multiple Visceral Resections.
Paul H. T. Thorlaksson, Winnipeg, Manitoba, Canada, Multiple Primary Foci of Carcinoma of the Colon.
Charles B. Puestow, Chicago, Causes of Postcholecystectomy Syndrome.
Reginald A. Shipley, Cleveland, Physiology of Thyroid Gland.
Allen Graham, Pittsburgh, Criteria of Thyroid Malignancy.
Elmer C. Bartels, Boston, Preoperative Use of Antithyroid Drugs.
Richard B. Cattell, Boston, Technic of Thyroidectomy.
George Crile Jr., Cleveland, Treatment of Hyperthyroidism.
Rulon W. Rawson, New York, Radioactive Iodine: Its Use in the Study and Treatment of Thyroid Neoplasms.
Robert W. Bartlett, St. Louis, Pitfalls in Management of Nodular Goiter.
Arthur B. McGraw, Detroit, Surgical Aspects of Meckel's Diverticulum.
R. Russell Best, Omaha, Factors Related to Avoiding the Colostomy in Lesions of the Rectosigmoid.
J. Norman O'Neill, Los Angeles, Critical Analysis of Fifty Diaphragmatic Hiatus Hernias Repaired by the Abdominal or Transthoracic Approach.
Claude S. Beck, Cleveland, Surgical Treatment of Coronary Disease.
Thomas J. Kinsella, Minneapolis, Thoracic Emergencies.
Stuart W. Harrington, Rochester, Minn., Surgical Treatment of Bilateral Carcinoma of Breast.
Donald Munro, Boston, Herniation of Temporal Cortex through the Incisura Tentorii.
Norman W. Thiessen, Cleveland, Education of the Biliary Surgeon.
Herbert B. Wright, Cleveland, Ureteral Abnormalities as Related to General Surgery.
James A. Jackson and John R. Steeper, Madison, Wis., Operative Excision of Giant Panniculus Adiposus. (Motion Picture).
Dudley Jackson Sr., San Antonio, Texas, Study of Breast Secretion for Detection of Intramammary Pathology and the Detection of the Silent Papilloma.
C. Hunter Shelden, Pasadena, Calif., Surgical Management of Intracranial Arteriovenous Aneurysms.

At the banquet at the Statler Hotel Thursday evening Dr. Frank Lahey, Boston, will speak on "Recent Advances in Surgery." Convocation will be held Friday evening. Color television of surgical operations under way at St. Vincent Charity Hospital will be shown Wednesday through Friday, sponsored by Smith Kline & French Laboratories of Philadelphia.

CANADA

Gross Memorial Lecture.—The thirteenth annual Louis Gross Memorial Lecture, under the auspices of the Montreal Clinical Society, will be delivered at Jewish General Hospital, Montreal, October 25 at 8:30 p. m. by Dr. G. Lyman Duff, Strathcona professor of pathology and director of Pathological Institute, McGill University. His subject will be "The Pathogenesis of Atherosclerosis."

FOREIGN

WHO Western Pacific Organization.—The World Health Organization, which already has set up regional organizations in the Eastern Mediterranean, Southeast Asia and the Americas as well as a special office for Europe, is now preparing for the creation of a new regional organization for the Western Pacific area. The region provisionally includes Australia, China, the Philippines, South Korea, New Zealand, Viet Nam, Laos, Cambodia, Japan, Malaya and Singapore, comprising over 600,000,000 persons.

Therapeutic Days in Paris.—A two day program on therapeutics will be held in the council hall of the Faculty of Medicine in Paris October 17-18 sponsored by the Therapeutic Union. Reports will be presented on three problems: (1) Habituation to Stupefacients, Professors Hazard, Wolf, Heuyer and Michaux, (2) Antimalarial Drugs, Lavier, Van Riel, Raffaele and others, and (3) Therapeutics of Hepatic Disease, Barnard, Simonart, Staub and others. Registration and communications should be sent before September 1 to the office of the Secretary General, Prof. Lemaire, Hospital St. Antoine in Paris. The registration fee is 2,800 francs, payable to Doin & Cie, Editors, 8 Place de l'Odeon, Paris 6c, France.

CORRECTION

Cerebral Palsy Center in Memphis.—The new outpatient treatment center for cerebral palsied children mentioned in THE JOURNAL July 15, page 1007, is located in Memphis, Tenn., not in Nashville. Its work is carried on by the Cerebral Palsy Parents Council for West Tennessee, University of Tennessee College of Medicine and Les Passees volunteers.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

ARIZONA: October 17-19. Phoenix. Sec., Dr. J. H. Patterson, 316 W. McDowell Road, Phoenix.

ARKANSAS: * Little Rock, Nov. 9-10. Sec., Dr. Joe Verser, Harrisburg. Homeopathic: Nov. Sec., Dr. C. S. Bungart, 105 N. 14th St., Ft. Smith. Eclectic: Nov. 9. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination Written.* Sacramento, Oct. 16-19. *Examination, Oral and Clinical for Foreign Medical School Graduates,* San Francisco, Nov. 12. *Reciprocity, Oral Examination,* San Francisco, Nov. 11. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento 14.

COLORADO: * Denver, Jan. 3-5, 1951. Exec. Sec., Mrs. B. M. Hudgens, 831 Republic Bldg., Denver.

CONNECTICUT: * Hartford, Nov. 14-15. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven. Homeopathic: Nov. 14-15. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: Dover, Jan. 9-11. *Reciprocity.* Jan. 18, 1951. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA: * Jacksonville, Nov. 26-28. Sec., Dr. Homer Pearson, 701 Dupont Bldg., Miami.

GEORGIA: Atlanta, Oct. 10-11. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, Jan. 8-11, 1951. Sec., Dr. I. L. Tilden, 881 S. Hotel St., Honolulu.

IDAHO: Boise, Jan. 8, 1951. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

ILLINOIS: Chicago, Oct. 10-12. Superintendent of Registration, Mr. Charles F. Kervin, Capitol Bldg., Springfield.

INDIANA: Indianapolis, June 1951. Exec. Sec., Miss Ruth V. Kirk, 1138 K. of P. Bldg., Indianapolis 4.

IOWA: *Written.* Des Moines, Dec. 4-6. Acting Director, Division of Examination and Licensure, State Department of Health, 1027 Des Moines St., Des Moines.

KANSAS: Topeka, Dec. 13-14. Sec., Dr. O. W. Davidson, 772 New Brotherhood Bldg., Kansas City.

LOUISIANA: New Orleans, Dec. 8-10. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Portland, Nov. 14-15. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, Dec. 12-15. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1.

MASSACHUSETTS: Boston, Jan. 23-26, 1951. Sec., Dr. Geo. R. Schadt, 37 State House, Boston.

MINNESOTA:* Minneapolis, Oct. 17-19. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: Jackson, December. Asst. Sect., Dr. R. N. Whitfield, Jackson 113.

MISSOURI: October 19-21. Kansas City. Exec. Sec., Mr. John A. Hailey, P. O. Box 4, Jefferson City.

MONTANA: Helena, Oct. 2. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEBRASKA:* June 1951. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln.

NEVADA: Nov. 6. Carson City. Sec., Dr. George H. Ross, 112 Curry Street, Carson City.

NEW JERSEY: Trenton, Oct. 17-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, Oct. 9-10. Sec., Dr. Charles J. McGoey, Coronado Building, Santa Fe.

NEW YORK: New York, Buffalo, Albany and Syracuse, Oct. 3-6. Sec., Dr. Jacob L. Lochner, 23 S. Pearl St., Albany.

NORTH CAROLINA: *Reciprocity.* Raleigh, Sept. 25. Sec., Dr. Ivan Procter, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 3-6. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: Columbus, December. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * *Examination.* Portland, January 1951. *Reciprocity.* Portland, Oct. 13. Sec., Mr. Howard I. Bobbit, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia, January 1951. Acting Secretary, Mrs. M. G. Steiner, Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Oct. 5-6. Chief, Mr. Thomas B. Casey, 355 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 13-15. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: Jan. 15-16. Sioux Falls, South Dakota. Sec., Dr. C. E. Sherwood, 300 First National Bank Bldg., Sioux Falls.

TENNESSEE: * Memphis, Sept. 27-28. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis 3.

TEXAS: * Fort Worth, November 9-11, 1950. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth.

UTAH: Salt Lake City, July 1951. Dir., Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

VERMONT: Burlington, February 1951. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Nov. 30, Dec. 1-2. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

WASHINGTON: * Seattle, January 1951. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

WEST VIRGINIA: Charleston, Oct. 2-4. Sec., Dr. N. H. Dyer, State Capitol, Charleston 6.

WISCONSIN: * River Falls, Jan. 9-11, 1951. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Oct. 2. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: Little Rock, Oct. 3-4. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

CONNECTICUT: Oct. 14. Executive Sec., M. G. Reynolds, State Board of Healing Arts, 110 Whitney Ave., New Haven 10.

DISTRICT OF COLUMBIA: Washington, Oct. 23-24. Dr. Daniel L. Seckinger, 4130 E. Municipal Bldg., Washington.

FLORIDA: Jacksonville, Nov. 11. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

IOWA: Des Moines, Oct. 10. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 North Walnut Street, Lansing 15.

MINNESOTA: Minneapolis, Oct. 3-4. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: *Examination.* Omaha, Oct. 3-4. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Building, Lincoln 9.

RHODE ISLAND: *Examination.* Providence, Nov. 8. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Building, Providence.

SOUTH DAKOTA: Vermillion, Dec. 1-2. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TEXAS: *Examination.* Austin, Oct. 13-14, April 1951. Sec., Brother Raphael Wilson, 306 Nalle Building, Austin.

WASHINGTON: Seattle, January 1951. Sec., Mr. Edward D. Dohm, Department of Licenses, Olympia.

WISCONSIN: *Examination.* Milwaukee, Dec. 2. Sec., Mr. W. H. Barber, Scott and Watson Sts., Ripon.

Coming Medical Meetings

American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago, Oct. 8-13. Dr. W. L. Benedict, 100 First Avenue Bldg., Rochester, Minn., Secretary.

American Academy of Pediatrics, Palmer House, Chicago, Oct. 16-19. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Blood Banks, Stevens Hotel, Chicago, Oct. 12-14. Miss Marjorie Saunders, 3301 Junius, Dallas 1, Texas, Secretary.

American Association of Medical Record Librarians, Somerset Hotel, Boston, Oct. 23-27. Miss Martha M. Bailer, 18 E. Division St., Chicago 10, Executive Secretary.

American Clinical and Climatological Association, Red Lion Inn, Stockbridge, Mass., Aug. 17-19. Dr. James Bordley III, Mary Imogene Bassett Hospital, Cooperstown, N. Y., Secretary.

American College of Surgeons, Boston, Oct. 23-27. Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secretary.

American Public Health Association, Hotels Statler and Jefferson, St. Louis, Oct. 30-Nov. 3. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

American Society for the Study of Arteriosclerosis, Hotel Knickerbocker, Chicago, Nov. 5-6. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

American Society of Anesthesiologists, Houston, Texas, Nov. 7-10. Dr. J. Earl Remlinger Jr., 188 W. Randolph St., Chicago 1, Secretary.

American Society of Clinical Pathologists, Drake Hotel, Chicago, Oct. 17-21. Dr. Clyde G. Culbertson, 1040 W. Michigan St., Indianapolis 7, Secretary.

American Society of Tropical Medicine, Savannah, Ga., Nov. 6-9. Dr. Quentin M. Geiman, 25 Shattuck St., Boston 15, Mass., Secretary.

Association of American Medical Colleges, Lake Placid, N. Y., Oct. 22-25. Dr. Dean F. Smiley, 185 N. Wabash Ave., Chicago, Secretary.

Association of Life Insurance Medical Directors of America, New York, Oct. 19-20. Dr. Henry B. Kirkland, P. O. Box 594, Newark 1, N. J., Secretary.

Association of Military Surgeons of the United States, Hotel Statler, New York, Nov. 9-11. Col. James M. Phalen, Armed Forces Institute of Pathology, Washington 25, D. C., Secretary.

Association of State and Territorial Health Officers, Washington, D. C., Oct. 23-27. Dr. Leroy E. Burney, 1098 W. Michigan St., Indianapolis 7, Secretary.

Central Neuropsychiatric Association, Hollenden Hotel, Cleveland, Oct. 13-14. Dr. Lee M. Eaton, 102 Second Ave., S.W., Rochester, Minn., Secretary.

Delaware Medical Society of, Dover, Oct. 2-4. Dr. Andrew H. Gehret, 1007 Park Place, Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Oct. 2-4. Mr. Theodore Wiprud, 1718 M Street N.W., Washington 6, Secretary.

Gerontological Society, Inc., Chase Hotel, St. Louis, Nov. 12-13. Dr. Henry S. Sims, 630 W. 168th St., New York 32, Secretary.

International College of Surgeons, United States Chapter, Cleveland Hotel, Cleveland, Oct. 30-Nov. 3. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago, Executive Secretary.

Interstate Postgraduate Medical Association of North America, Hotel Stevens, Chicago, Nov. 6-9. Dr. Arthur G. Sullivan, 16 N. Carroll St., Madison, Wis., Managing Director.

Kansas City Southwest Clinical Society, Municipal Auditorium, Kansas City, Mo., Oct. 2-5. Mr. E. Leas Clower, 630 Shukert Bldg., Kansas City 6, Executive Secretary.

National Gastroenterological Association, Hotel Statler, New York, Oct. 9-11. Dr. Sigurd W. Johnsen, 1818 Broadway, New York 23, Secretary.

Nevada State Medical Association, Las Vegas, Oct. 5-7. Dr. Wesley W. Hall, 307 West Sixth St., Reno, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, Oct. 15-19. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh 22, Secretary.

Postgraduate Medical Assembly of South Texas, Shamrock Hotel, Houston, Texas, Nov. 20-22. Dr. Donald M. Paton, 229 Medical Arts Bldg., Houston, Secretary.

Southern Medical Association, St. Louis, Nov. 13-16. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

Southwestern Medical Association, Hotel Westward Ho, Phoenix, Ariz., Oct. 26-28. Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Texas, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 8-11. Mr. H. S. Johnson, 1200 East Clay St., Richmond 19, Executive Secretary.

Wisconsin, State Medical Society of, Hotel Schroeder and Milwaukee Auditorium, Milwaukee, Oct. 1-4. Mr. C. H. Crownhart, 704 E. Gorham St., Madison, Secretary.

International Meetings

International Association of Milk and Food Sanitarians, Hotel Dennis, Atlantic City, N. J., Oct. 13-16. Mr. George A. West, Rochester Health Bureau, Rochester 2, N. Y., Secretary.

World Medical Association, Hotel Roosevelt, New York City, U. S. A., Oct. 16-20. Dr. Louis H. Bauer, 2 E. 103d St., New York City 29, Secretary-General.

DEATHS

Ridpath, Robert Ferguson ✠ Philadelphia; born in Jenkintown, Pa., April 3, 1876; Medico-Chirurgical College of Philadelphia, 1899; emeritus professor of otorhinology at Temple University School of Medicine and associate professor of laryngology, the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; specialist certified by the American Board of Otolaryngology; chairman, Section on Laryngology, Otology and Rhinology, American Medical Association, 1937-1938; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological Association, American Laryngological, Rhinological and Otological Society and American Broncho-Esophagological Association; consultant, Riverview Hospital in Norristown, New York Skin and Cancer Hospital in New York, and the Jewish Graduate and Temple University hospitals; in 1934 received the honorary degree of doctor of science from Ursinus College, Collegeville, Pa.; died in Cape May, N. J., August 10, aged 74, of carcinoma of the liver.

Dawson, Lionel Montrose, Unionville, Conn.; born in Plevna, Ont., Canada, in 1883; Queen's University Faculty of Medicine, Kingston, Ont., 1909; L.R.C.P., London and M.R.C.S., England, 1911; during World War I served with the Royal Army Medical Corps and was awarded the Military Cross for services beyond the call of duty; from 1912 to 1914 superintendent of the Isolation Hospital in Ottawa, Ont., where he practiced from 1919 to 1926; active Boy Scout leader and in 1938 was awarded the Silver Beaver; served on Selective Service Draft Board in Hartford, Conn., from 1940 to 1946; for many years assistant superintendent of the department of medicine and hygiene of the Travelers' Insurance Company, Hartford; died in West Suffield August 8, aged 66, of emphysema and coronary disease.

Messinger, Harry Carleton ✠ Providence, R. I.; born in East Providence, Sept. 17, 1881; Harvard Medical School, Boston, 1904; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; past president of the New England Ophthalmological Society and the Providence Medical Association; served during World War I; fellow of the American College of Surgeons; affiliated with Rhode Island Hospital, Butler Hospital, Emma Pendleton Bradley Home, Charles V. Chapin Hospital and Providence Lying-In Hospital; in 1932 received the annual Fiske Fund Premium for his dissertation on "The Value of Ocular Signs and Symptoms in the Diagnosis of General Disease"; died August 2, aged 68, of uremia.

Garberson, John Howard ✠ Miles City, Mont.; born in Alta, Iowa, Oct. 12, 1883; Northwestern University Medical School, Chicago, 1907; past president and for many years a member of the state board of medical examiners; fellow of the International College of Surgeons and the American College of Surgeons; past president of the Montana State Medical Association, of which he had been a councilor; member of the founders group of the American Board of Surgery; major, medical reserve corps of the U. S. Army; affiliated with Garberson Clinic and Holy Rosary Hospital, where he died August 9, aged 66, of cardiac decompensation and uremia.

Lafferty, Robert Hervey, Charlotte, N. C.; born in Davidson, N. C., Aug. 28, 1878; North Carolina Medical College, Davidson, 1906; specialist certified by the American Board of Radiology; member of the American Medical Association, American Roentgen Ray Society and Radiological Society of North America; charter member and fellow of the American College of Radiology; at one time professor of chemistry and physiology at his alma mater, where he was registrar; radiologist to Marion Sims Memorial Hospital, Lancaster, S. C.; consultant radiologist to Mercy, Presbyterian and Memorial hospitals; died July 31, aged 72, of acute leukemia.

Johnson, Joseph Wilson, Chattanooga, Tenn.; born in Maplesville, Ala., Jan. 28, 1877; Medical Department of Tulane University of Louisiana, New Orleans, 1899; member of the American Medical Association; past president of the Chattanooga-Hamilton County Medical Society; former vice president of the Tennessee Medical Association; chairman of the board of the Interstate Life and Accident Company, of which he had been medical director and president; served on the staff of Baroness Erlanger Hospital; died August 6, aged 73, of bronchiectasis and bronchopneumonia.

✠ Indicates Fellow of the American Medical Association.

Pace, Garland H., ✠ Salt Lake City; born in Nutrioso, Ariz. Aug. 11, 1887; College of Physicians and Surgeons of San Francisco, 1917; since 1949 clinical lecturer in psychiatry at the University of Utah College of Medicine; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; served during World Wars I and II; formerly superintendent of the Utah State Hospital in Provo; affiliated with Holy Cross Hospital, Salt Lake County General Hospital and the Latter Day Saints Hospital, where he died July 24, aged 62, of coronary occlusion.

Warren, David Edward ✠ Passaic, N. J.; College of Physicians and Surgeons, Baltimore, 1892; University of Buffalo School of Medicine, 1893; specialist certified by the American Board of Psychiatry and Neurology; instructor in neurology at the New York Post-Graduate Medical School and Hospital from 1923 to 1927; past president of the New Jersey Neuropsychiatric Association; during World War II on the staff of the Newark Induction Center; served on the staffs of St. Mary's and Passaic General hospitals; died July 14, aged 81.

Bassett, Frank Houston, Hopkinsville, Ky.; University of Nashville (Tenn.) Medical Department, 1910; member of the American Medical Association; past president of the Christian County Medical Society and the Southern Association of Anaesthesists; for many years county clerk; past president of the Class D Kitty Baseball League and former umpire for the Southern Association; died August 5, aged 76.

Bernhardt, Harry Bernard, Chicago; Northwestern University Medical School, Chicago, 1909; died in Loretto Hospital August 15, aged 65, of myocardial infarction.

Berryhill, William A., Eupora, Miss.; Gate City Medical College, Dallas, Texas, 1907; died July 22, aged 91.

Butt, William Alvin, Green Forest, Ark.; College of Physicians and Surgeons, Little Rock, 1910; died July 31, aged 67.

Collins, Frank B., Webster, N. Y.; Detroit College of Medicine, 1901; member of the American Medical Association; died in Genesee Hospital, Rochester, N. Y., August 15, aged 79, of injuries received in an automobile accident.

Deemar William Rogers, Tarentum, Pa.; Atlanta School of Medicine, 1910; member of the American Medical Association; for many years affiliated with Allegheny Valley Hospital, where he died August 2, aged 66, of cancer of the prostate and Paget's disease.

Devlin, Peter Clarke ✠ Lynn, Mass.; Baltimore Medical College, 1902; for many years member of the board of health; affiliated with Lynn Hospital and Union Hospital; died July 25, aged 72, of coronary thrombosis.

Ducote, Remy G., Bordelonville, La.; University of the South Medical Department, Sewanee, Tenn., 1904; member of the American Medical Association; past president of the Eighth District Medical Society; coroner of Avoyelles Parish; served on the Avoyelles Parish School Board; died July 19, aged 72, of pneumonia.

Flau, Norman Carl Pomona, Calif.; University of Illinois College of Medicine, Chicago, 1945; member of the American Medical Association; affiliated with the Pomona Valley Community Hospital; died in Redlands Community Hospital, Redlands, July 18, aged 28, of injuries received in an automobile accident.

Gauntlett, James W., Traverse City, Mich.; Barnes Medical College, St. Louis, 1901; member of the American Medical Association; died July 15, aged 79, of coronary thrombosis.

Geist, Otto Bernhardt, Buffalo; University of Buffalo School of Medicine, 1940; member of the American Medical Association; certified by the National Board of Medical Examiners; specialist certified by the American Board of Surgery; affiliated with Emergency Hospital, Millard Fillmore Hospital and Meyer Memorial Hospital, where he died July 27, aged 35, of carcinoma of the stomach with metastases.

Getman, Volkert Lincoln, Gloversville, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1904; member of the American Medical Association; died July 20, aged 84, of uremia and nephrosclerosis due to generalized arteriosclerosis.

Gillham, Anna Merrill, San Diego; Chicago Homeopathic Medical College, 1882; died July 14, aged 88.

Glass, John B., Natchitoches, La.; Memphis (Tenn.) Hospital Medical College, 1903; died August 1, aged 69, of coronary embolism.

Graham, Aristophane, Leakesville, Miss.; Atlanta College of Physicians and Surgeons, 1912; member of the American Medical Association; died in Baptist Hospital, Jackson, July 22, aged 64, of hypostatic pneumonia and Parkinson's disease.

Harding Thomas Ernest White, Los Angeles; McGill University Faculty of Medicine, Montreal, Que., Canada, 1926; specialist certified by the American Board of Radiology; member of the American College of Radiology; affiliated with the Moore-White Clinic; died August 17, aged 49, of carcinoma.

Head, Jones Wesley, Borger, Texas; University of Louisville (Ky.) Medical Department, 1893; died July 3, aged 80.

Hesson, Henry Clay, Red Boiling Springs, Tenn.; University of Tennessee Medical Department, Nashville, 1907; died July 31, aged 80, of cardiac failure

Johnson, Leslie Gloyd ✠ Springfield, Ore.; University of Oregon Medical School, Portland, 1909; served during World War I; formerly on the staff of McAuley Hospital, Coos Bay; affiliated with Sacred Heart General Hospital in Eugene, where he died July 31, aged 65, of hemorrhage and gastric ulcer.

Kelly, Daniel Wade, Oak Grove, La.; University of Nashville (Tenn.) Medical Department, 1903; served during World War I; formerly coroner of West Carroll Parish; died July 18, aged 73, of carcinoma of the stomach.

Kelsey, Arthur Jonas, Monterey, Ind.; Rush Medical College, Chicago, 1903; member of the American Medical Association; died July 25, aged 69, of coronary occlusion and angina pectoris.

Killius, William Joseph, Johnstown, Pa.; Medical College of Virginia, Richmond, 1926; member of the American Medical Association; served during World Wars I and II; formerly on the staff of Conemaugh Valley Hospital, where he died August 3, aged 54, of adenocarcinoma of the sigmoid and ileum.

Leonard, Walter Adnah ✠ Cambridge, N. Y.; Albany (N. Y.) Medical College, 1899; member of the American Public Health Association; for many years member of the New York State Public Health Council; past president of the Washington County Medical Society and the New York State Sanitary Officers' Association; for many years health officer; affiliated with Mary McClellan Hospital; died July 18, aged 77, of heart disease.

Lobdell, Effie Leola, Chicago; Fort Wayne College of Medicine, 1891; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Grant Hospital; died in Wesley Memorial Hospital August 8, aged 83, of bronchopneumonia, diabetes mellitus and carcinoma of the pancreas.

Losche, Herbert, Jamaica, N. Y.; University and Bellevue Hospital Medical College, New York, 1930; member of the American Medical Association; affiliated with Kew Gardens (N. Y.) General Hospital, Jamaica and Queens General hospitals; died July 7, aged 47, of myocardial infarction.

McClain, Talmadge Bright, Vista, Calif.; licensed in Arkansas in 1909; died in Carlsbad, June 11, aged 70, of heart disease.

McNinch, James Robinson ✠ West Alexander, Pa.; Eclectic Medical Institute, Cincinnati, 1901; served on the staff of the Ohio Valley General Hospital, Wheeling, W. Va.; died August 16, aged 75, of coronary thrombosis.

Markey, Edward Bond ✠ Dayton, Ohio; Cornell University Medical College, New York, 1906; affiliated with Miami Valley Hospital, St. Elizabeth Hospital and Good Samaritan Hospital, where he died July 19, aged 71, of coronary thrombosis.

Markham, Homer Everett, Ottawa, Kan.; Rush Medical College, Chicago, 1892; member of the American Medical Association; died June 19, aged 83, of carcinoma of the stomach.

Meinhardt, Victor Julius ✠ St. Louis; St. Louis University School of Medicine, 1923; member of the American Association of Industrial Physicians and Surgeons; affiliated with Christian Hospital; died suddenly, June 26, aged 56, of coronary occlusion.

Meminger, William Hinkle ✠ Juniata, Pa.; Medico-Chirurgical College of Philadelphia, 1906; member of the board of health and school director in Juniata; affiliated with Mercy Hospital and Altoona Hospital in Altoona; died August 7, aged 68, of coronary thrombosis.

Merritt Silas Virgil ✠ Fall River, Mass.; Long Island College Hospital, Brooklyn, 1894; veteran of the Spanish-American War; at one time police surgeon; past president of the Bristol South District Medical Society; on the staff of the Fall River General Hospital and for many years on the staff of Union Hospital; died August 16, aged 77, of myocardial infarction.

Miller, Roshier W., ✠ Richmond, Va.; University College of Medicine, Richmond, 1897; emeritus professor of materia medica and therapeutics at the Medical College of Virginia; for many years member and chairman of the school board; past president of the Richmond Academy of Medicine; member of the board of the State Planters Bank and Trust Company; died in Petersburg, July 14, aged 80, of injuries received in an automobile accident.

Minney, George Morrow, Pasadena, Calif.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1903; died July 24, aged 77, of coronary thrombosis.

Moorman, Elmer Richard ✠ Medical Inspector, Commander, U. S. Navy, Kilmarnock, Va.; born in Hardy, Va., Dec. 29, 1896; Medical College of Virginia, Richmond, 1930; interned at City Memorial Hospital, Winston-Salem, N. C., and served a residency at South Side Hospital in Farmville, Va.; in 1944 appointed a lieutenant commander in the medical reserve corps of the U. S. Navy; transferred to the Medical Corps of the U. S. Navy in May 1947; died August 13, aged 54, of carcinoma of the left lung.

Moreland, George Boulton, Newtown Square, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; fellow of the American College of Surgeons; served overseas during World War I; formerly practiced in Pittsburgh, where he was affiliated with Shadyside Hospital and where he died July 7, aged 80, of myocardial infarction and coronary occlusion.

Morrison, Clyde C., ✠ Greensburg, Ind.; Grand Rapids Medical College, 1903; veteran of the Spanish-American War; served on the staff of Decatur County Memorial Hospital, where he died August 8, aged 77, of cerebral hemorrhage.

Mullin, Herbert Y., Rockfield, Ind.; Illinois Medical College, Chicago, 1904; member of the American Medical Association; affiliated with St. Joseph Hospital and Memorial Hospital, where he died July 20, aged 73, of hemorrhage and gastric ulcer.

Niblack, Earl S., ✠ Terre Haute, Ind.; University of Michigan Department of Medicine, Ann Arbor, 1895; an Associate Fellow of the American Medical Association; for many years affiliated with Union Hospital; died in Manhasset, N. Y., July 14, aged 80, of uremia.

O'Sullivan, Mary Elizabeth, Medford, Mass.; Boston University School of Medicine, 1931; certified by the National Board of Medical Examiners; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; served on the faculty of New York University College of Medicine in New York, where she was formerly on the staff of Bellevue Hospital; died August 8, aged 48, of carcinoma.

Pecoraro, Amedeo Michael, New York; Loyola University School of Medicine, Chicago, 1930; member of the American Medical Association; affiliated with St. Clare's and Mother Cabrini Memorial hospitals; died July 30, aged 50, of heart disease.

Petersen, Norman Victor, Erie, Pa.; University of Pittsburgh School of Medicine, 1941; received a citation and Bronze Star medal for meritorious service during World War II; died July 10, aged 35, of astrocytoma of the brain.

Pfeiffer, Henry March ✠ New York; University of Pennsylvania School of Medicine, Philadelphia, 1919; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; for many years associated with Four Winds in Katonah, N. Y., where he was associate medical director; died in St. Luke's Hospital July 11, aged 58, of heart disease.

Post, Ernest Nicholas, Buffalo; Syracuse University College of Medicine, 1905; died in the Millard Fillmore Hospital April 14, aged 72, of acute myocardial infarction and diabetes mellitus.

Reichel, Emanuel Lawrence ✠ New York; University of Texas School of Medicine, Galveston, 1943; served during World War II; affiliated with New York Polyclinic, Beth Israel and Bellevue hospitals; died in the Hospital for Special Surgery July 20, aged 34, of carcinoma.

Richardson, Edward Elliott, Washington, D. C.; Columbian University Medical Department, Washington, 1895; member of the American Medical Association; also a clergyman; demonstrator in the department of anatomy from 1897 to 1908 at his alma mater, now known as George Washington University School of Medicine, where from 1912 to 1938 he was professor of philosophy; died July 17, aged 77, of coronary sclerosis and myocardial infarction.

Rosenfeld, William, Brooklyn; Long Island College Hospital, Brooklyn, 1908; member of the American Medical Association; died July 13, aged 70, of coronary thrombosis.

Savage, Seth Hubbard ✦ Solana Beach, Calif.; Denver and Gross College of Medicine, 1908; served during World War I; member of the school board; affiliated with Scripps Memorial Hospital in La Jolla; died in Muskegon, Mich., July 19, aged 72, of coronary thrombosis.

Sawyer, William B., Miami, Fla.; Meharry Medical College, Nashville, 1908; affiliated with Christian Hospital; died in the Jackson Memorial Hospital July 29, aged 65, of coronary thrombosis.

Schimberg, Arnold, Chicago; Northwestern University Medical School, Chicago, 1927; member of the American Medical Association; fellow of the International College of Surgeons; instructor in surgery at his alma mater; affiliated with Wesley Memorial Hospital; died July 18, aged 48, of myocardial infarction.

Scull, Carl Brown, Dover, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1928; president of the Medical Society of Delaware; member of the American Medical Association; served during World War II; affiliated with Kent General Hospital and in 1949 president of the hospital staff; died July 26, aged 47, of coronary occlusion.

Shumate, Frederick Ortman ✦ San Francisco; Northwestern University Medical School, Chicago, 1931; physician in charge of the San Francisco Municipal Retirement Board; on the staff of San Francisco Hospital; died in Memorial Hospital, New York, August 8, aged 49, of sarcoma.

Smejkal, Frank John ✦ Chicago; University of Illinois College of Medicine, Chicago, 1926; associate professor of medicine, Chicago Medical School; certified by the National Board of Medical Examiners; member of the American Trudeau Society; member and past president of the Irving Park Branch of the Chicago Medical Society; served during World War I; affiliated with Swedish Covenant Hospital and the Municipal Tuberculosis Sanitarium; died August 11, aged 60, of cerebral vascular hemorrhage.

Smith, Edward Sanborn ✦ Kirksville, Mo.; University of Maryland School of Medicine, Baltimore, 1900; past president of the state board of health, of which he had been a member for many years; fellow of the American College of Physicians; served during World War I; formerly affiliated with Grim-Smith Memorial Hospital; died July 23, aged 75, of cerebral hemorrhage.

Smith, John Vincent ✦ Perth Amboy, N. J.; Long Island College Hospital, Brooklyn, 1912; member of the American Heart Association; fellow of the American College of Physicians; formerly city commissioner; served as a member of the state board of institutions and agencies; affiliated with Perth Amboy General Hospital; died July 14, aged 61, of coronary thrombosis.

Smith, Joseph Littleton ✦ Dubach, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1907; died July 11, aged 66, of coronary occlusion.

Smith, Mouldon ✦ McAllen, Texas; Vanderbilt University School of Medicine, Nashville, 1915; died July 24, aged 62, of carcinoma of the colon.

Spears, Llewellyn Powell ✦ Louisville, Ky.; Kentucky University Medical Department, Louisville, 1899; served in France during World War I; affiliated with St. Joseph's Infirmary and Norton Memorial Infirmary, where he died July 19, aged 72, of cerebral hemorrhage.

Speheger, Benjamin Albert, Bedford, Ind.; Indiana University School of Medicine, Indianapolis, 1938; member of the American Medical Association; served during World War II; died July 24, aged 41, of coronary occlusion and bilateral pulmonary infarction.

Stewart, Edward S. ✦ Plainfield, Ill.; Northwestern University Medical School, Chicago, 1892; an Affiliate Fellow of the American Medical Association; formerly practiced in Chicago, where he was affiliated with Woodlawn Hospital and Provident Hospital; died in Silver Cross Hospital, Joliet, July 27, aged 88, of coronary heart disease.

Stone, John Henry, Tremont, Miss.; Vanderbilt University School of Medicine, Nashville, 1899; member of the American Medical Association; member of the state board of health; formerly member of the state legislature; once county health officer; instrumental in the establishment of a high school, of which he had been trustee for many years; served as superintent of the School for the Deaf in Jackson; died in the Community Hospital, Tupelo, August 1, aged 75, of cerebral hemorrhage.

Swalm, William Albert ✦ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1911; associate professor of medicine at Temple University School of Medicine; specialist certified by the American Board of Internal Medicine; member of the American Gastro-Enterological Association; fellow of the American College of Physicians; affiliated with Temple University Hospital, where he died August 11, aged 62, of coronary occlusion.

Taylor, Richard Augustus ✦ New York; Leonard Medical School, Raleigh, 1901; Long Island College Hospital, Brooklyn, 1903; died July 9, aged 80.

Teich, William E. H., Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; died in the Milwaukee County Hospital June 17, aged 82, of cerebral thrombosis and arteriosclerosis.

Thal, Paul Edward ✦ Zion, Ill.; Chicago Medical School, 1922; affiliated with Belmont Hospital in Chicago; died in Victory Memorial Hospital, Waukegon, August 16, aged 63, of adenocarcinoma of the cecum.

Theobald, Frank John, Cary, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; died in St. Elizabeth Hospital, Chicago, July 28, aged 67, of carcinoma of the upper lobe of the right lung.

Thurston, Harry Elmer, Texhoma, Okla.; Physio-Medical College of Indiana, Indianapolis, 1898; died June 17, aged 78.

Tracy, James Nepthali, Memphis, Tenn. (licensed in Tennessee in 1905); died in the John Gaston Hospital July 19, aged 79, of bronchiectasis, cerebral thrombosis and arteriosclerosis.

Walsh, Frank Denton, Contra Costa, Calif.; College of Physicians and Surgeons of San Francisco, 1898; member of the American Medical Association; served during World War I; died in the Veterans Administration Hospital, Oakland, June 28, aged 75, of carcinoma of the rectum and phlebothrombosis with pulmonary embolus.

Waters, William Isaac ✦ Midland, Texas; Ohio State University College of Medicine, Columbus, 1937; served during World War II; assistant in surgery at Tulane University of Louisiana School of Medicine, New Orleans, from April 1, 1946 to March 31, 1947; killed in an automobile accident June 26, aged 37.

Watwood, James Anderson, Arab, Ala.; Emory University School of Medicine, Atlanta, 1925; died in Jefferson-Hillman Hospital, Birmingham, July 21, aged 66, of injuries received in an automobile accident.

Weidner, Morris Robert Sr., Dolton, Ill.; College of Physicians and Surgeons of Chicago, 1883; member of the American Medical Association; served as president of the village and of the First National Bank of Dolton; affiliated with Ingalls Memorial Hospital, Harvey, and Roseland Community Hospital, Chicago; died July 27, aged 93, of coronary embolism.

Weiss, Joseph Perry ✦ Akron, Ohio; Ohio State University College of Medicine, Columbus, 1927; affiliated with City Hospital, St. Thomas Hospital, Children's Hospital and People's Hospital, where he died July 4, aged 57, of cerebral thrombosis.

Wilhelmy, Orville ✦ Decatur, Ill.; Barnes Medical College, St. Louis, 1907; past president of the Macon County Medical Society; during World War I served on the county draft board; affiliated with Decatur and Macon County Hospital, Macon County Tuberculosis Sanatorium and St. Mary's Hospital; died July 17, aged 66, of acute coronary thrombosis.

Williamson, Frederick Yates ✦ Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1921; member of the Board of Police and Fire Surgeons; served during World War I; affiliated with Emergency, George Washington and Doctors hospitals; died August 19, aged 56.

Wilson, Louis F., ✦ Greensburg, Pa.; University of Virginia Department of Medicine, Charlottesville, 1901; school physician; affiliated with Westmoreland Hospital, where he died June 29, aged 74, of cerebral hemorrhage.

FOREIGN LETTERS

LONDON

(From a Regular Correspondent)

Sept. 7, 1950.

International Congress of Radiology

The Sixth International Congress of Radiology was opened by the Earl of Athlone, chancellor of the University of London, on July 24. Dr. Ralston Paterson (Manchester) was invested with the insignia of office as president of the congress. Scientific meetings took place in three main groups: (1) general congress symposiums, four in number, (2) a series of symposiums in each of the four main subdivisions of radiology, radiodiagnosis, radiotherapy, radiobiology and radiophysics, and (3) meetings of all four sections, with the addition of electrology, at which more than 300 papers were delivered.

GENERAL CONGRESS SYMPOSIUMS

Dr. R. S. Stone (U. S. A.) evaluated the late effects of the use of radiation in excess of 1,000 kv. There were definite advantages, although the relatively high incidence of deep fibrosis of tissues suggested caution. Prof. B. W. Windeyer (London), the chairman, pointed out that, in the range of one to four million volts, therapy has now emerged from the technically experimental stage and is available for clinical evaluation.

Sir Stanford Cade (London) opened a symposium on radiological achievements (1937-1950) with a review of the clinical aspects of radiodiagnosis and radiotherapy. Dr. Edith Quimby (U. S. A.) pointed out the need for a unified and adequate system of dosimetry for high energy radiations now being developed. She described some instruments designed to meet special problems in this field.

A paper was read for Dr. A. C. Christie (U. S. A.) outlining the development of mass radiology in the United States, when 15 million recruits were seen during the five years 1940 to 1945. Dr. P. Kerley (London) discussed the present position of mass miniature radiography. He pointed out that there were not yet figures to prove that mass radiography on a national scale was justified, although the statistics for selected groups showed the method to be of value.

RADIOTHERAPY

There was general agreement that the present lack of uniformity in methods of presenting results reduced the value of the contributions made by the various workers in cancer therapy. Suggestions for standard methods were put forward by Mr. J. W. Boag (London) and Dr. Denoix (France) for standardization of methods. It was proposed on behalf of the British Delegation that an International Committee for standardization of method be set up.

The use of radioactive isotopes in therapy was discussed. Radioiodine is now emerging from the experimental stage in the treatment of thyrotoxicosis in selected cases and has proved of value in both primary and metastatic carcinoma of the thyroid. Radiophosphorus has proved beneficial in the treatment of polycythemia vera and in chronic leukemias. These points were made in contributions by Mr. G. W. Blomfield (Sheffield), Dr. J. G. Hamilton (U. S. A.) and Dr. L. O. Jacobson (U. S. A.). Professor D. W. Smithers (London) remarked that many applications of artificial isotopes, in both therapy and diagnosis, were being tried, but that experience had been short in this country compared with that in the United States.

In the section on radiobiology, Dr. Glucksman (Cambridge) described the action of radiation in promoting differentiation and so inducing a process by which some malignant cells can be rendered nonviable, although they are not "immediately" destroyed. This process can be followed by serial biopsies of tumors under treatment and has prognostic value.

Cancer of the Respiratory System

Dr. E. M. Brockbank, Manchester, writing in the *British Medical Journal*, Aug. 12, 1950, points out a progressive and steady increase in the number of deaths from cancer of the respiratory system in men and women in recent years. According to the annual returns of the Medical Officer of Health for Manchester for the years 1937-1946 the increases were from 133 to 188 in males and 23 to 45 in females. In 1949 it affected 234 males and 49 females. Leading British insurance companies, the informant adds, have been impressed by an increase of bronchial cancer in their death claims. These increases are probably due, to some extent, to more careful and accurate diagnosis of diseases of the lungs, but the correspondent points out that there are probably other reasons.

He quotes the great increase of cigaret smoking since the 1914-1918 war, especially in women. The Board of Trade returns show that the total weight of all forms of imported tobacco in millions of pounds rose from 114 in 1910 to 356 in 1919.

He quotes American opinion that the incidence of diagnosed cases of bronchial carcinoma is increasing at a rate which appears to be faster than that of other diagnosed tumors. Tobacco smoking as a cause has received particular attention there because of the great incidence of carcinoma of the lung in males as compared with females. It occurs chiefly in heavy smokers and especially from 40 to 70 years of age. In 330 postmortem examinations 78 per cent were of men and 21.9 per cent were of women.

He adds that there is much tar-containing soot in the Manchester atmosphere from domestic and commercial fires, and in recent years this has been added to, as elsewhere, by the black exhaust of Diesel-engine buses and other heavy vehicles. A sample of this was found to contain 3 per cent of a tarry oil which produced epithelioma of the skin on laboratory mice. There was no evidence that inhalation of this exhaust tar can cause cancer of the lungs, as laboratory animals could not be exposed to it for long enough periods.

Survival of Sixteen Ounce Baby

Dr. H. Fakim, resident medical officer of the Civil Hospital, Mauritius, reports the birth of a 16 oz. (454 Gm.) baby that has survived. He states that only a few cases are on record of survival of babies weighing less than 2 lb. (907 Gm.) at birth. In surveying the literature he was able to trace only six such cases. At birth the infant was very feeble and did not cry. The air passages were cleared, with a mucus catheter, and after injection of 1 ml. of nikethamide in the umbilical vein, respirations became well established. As no incubator was available, the child was kept wrapped up in cotton wool and placed in an ordinary cot lined with blankets. For the first four days the child was fed by pipette with 7 cc. of dextrose solution hourly and took her feedings well. On the fifth to the tenth days the child was fed every hour with 7 cc. of expressed breast milk diluted with an equal volume of dextrose water. The supply of breast milk then ceased, and feeding was continued with 7 cc. of condensed milk diluted with an equal volume of water. On the sixteenth day the child weighed 1 lb. 10 oz. (737 Gm.); on the thirty-eighth day the child weighed 2 lb. 12 oz. (1,247 Gm.). Feedings were then made up of dried milk.

The distance from the crown to the heel was 13 inches (33 cm.) a few days after birth. Roentgen examination of the foot on the eighteenth day after birth showed the presence of ossification centers of the calcaneus and the astragalus. Dr. Fakim points out that he has not found any record of survival of a child weighing less than 16 oz. at birth.

TURKEY

(From a Regular Correspondent)

ANKARA, July 29, 1950.

Contagious and Epidemic Diseases in Turkey

Microbiologist Dr. Razi Maner, chief of the communicable disease department of the Ministry of Health and Social Assistance, recently published the 1949 bulletin. Twenty-five years of prophylactic measures, organization and health education have resulted in the gradual reduction of communicable diseases. For years there have been no instances of cholera or plague, and yellow fever is never encountered. Outbreaks of smallpox, typhus and recurrent fever and the nature of immediate precautions taken, are reported to the ministry by telegram. Other communicable diseases are reported from day to day by mail. In the event of a serious outbreak, equipment, specialists and tent hospitals are rushed to the area, by air transportation if necessary.

Statistics for 1949

Disease	No. of Cases	No. of Deaths
Smallpox	73	14
Scarlet fever	1,586	3
Measles	8,857	286
Diphtheria	953	12
Whooping cough	3,759	46
Typhus exanthematicus	252	20
Typhoid	2,827	307
Paratyphoid A and B	260	15
Recurrent fever	242	5
Cerebrospinal meningitis	175	71
Dysentery (bacillary, amebic)	142	8
Summer infantile diarrhea	191,475	1,145
Poliomyelitis	13	3
Anthrax	1,235	32
Glanders	4	1
Brucellosis	30	2
Kala-azar	1	0
Puerperal fever	35	13
Leprosy	68	2
Rabies	20	20

Great care is taken that smallpox is not introduced from a neighboring country. For 65 years the smallpox vaccination law has been strictly enforced. All children are vaccinated at birth and revaccinated on entering school. Persons are vaccinated again if the situation requires induction into the army. Mothers are advised to have their children immunized against diphtheria at the end of the first year of life, as the disease occurs mostly among school children and in urban communities; it is rarely encountered in rural communities. Scarlet fever, whooping cough, typhus and typhoid immunization is encouraged. Seasonal summer diarrhea, which takes the greatest toll among infants in rural communities, must be reported to the ministry, which provides the necessary drugs free of charge.

Malaria control has been under way now for 26 years, with a resultant good reduction in the morbidity and mortality rate. The disease is still the greatest public health problem. However, administration of quinacrine has greatly reduced the mortality rate and ample use of DDT the morbidity rate. Mobile units touring the eastern and southern provinces provide the rural communities with vaccines, serums and drugs. The units are equipped with laboratories, with specialist, sanitarian and technician service. Questionable material is forwarded for further investigation to the Refik Saydam Institute of Hygiene in Ankara.

The Ministry of Health plans to establish secondary institutes of hygiene in the far eastern and southern provinces as soon as funds are available. Separate divisions have been organized for the control of tuberculosis, trachoma and syphilis. These diseases are reported, but their incidence is not listed in the table because of inaccuracies in compilation. On the basis of the tuberculosis death rate of 170 to 190 per 100,000 persons, it is estimated that there are 200,000 to 300,000 persons afflicted with tuberculosis. It is next in importance to malaria as a public health problem. The incidence of tuberculosis greatly increased during the war years, especially among the poor of urban communities where the housing shortage makes isolation difficult and favors contagion.

Trachoma is also reported, but the exact number of new cases is not known. In the trachoma campaign zones the disease is gradually coming under control. The incidence of blindness due to trachoma is steadily decreasing. The reports on syphilis are confidential and the records are secret. All medicaments in connection with these three divisions are paid for from the government budget.

Aureomycin Therapy in Brucellosis

Before the Turkish Medical Society of Istanbul Prof. Arif Ismet Çetingil, of Istanbul University, and his associate, Dr. Hifzi Bakim, reported two cases of brucellosis successfully treated with aureomycin. A student aged 17 had been ill for two months with chills, slight intermittent fever and headache. Before his admission to the Günüshsuyu private hospital at Bosphorus, Istanbul, he had been treated by the family physician with quinine, quinacrine hydrochloride and sulfonamides. The patient improved, but fever again occurred. The patient was given 300,000 units of penicillin, with apparent recovery. Fever again reappeared and the patient lost weight, whereupon he was taken to the hospital. On admission he had a temperature of 38.5 C. (101.3 F.) with profuse perspiration, pains in the body and headache. Blood examination revealed 3,800,000 erythrocytes, 9,100 leukocytes, 75 per cent hemoglobin with a differential count of 58 per cent polymorphonuclear neutrophils, 24 per cent lymphocytes, and 10 per cent monocytes, 6 per cent transitional mononuclear cells, 1 per cent eosinophils and 1 per cent basophils. Hemoculture revealed Brucella melitensis. Active serum (patient's) was positive for Brucella abortus at a titer of 1:100 (Bang's test); with inactive serum results were negative. The agglutination test with active serum revealed Brucella melitensis at a titer of 1:100 and 1:200, with inactive serum results were negative. The patient received 11 Gm. of aureomycin in small doses for seven days. The temperature dropped on administration of the first dose, and the patient completely recovered. He was discharged after 10 days, with no relapse in the two months of follow-up.

The second patient, a young woman aged 23 years, had had fever for 38 days after an abortion. She had been treated at home with penicillin without benefit. On admission to the Sultan Ahmed private hospital in Istanbul the patient had a temperature of 38.7 C. (101.7 F.), with excessive perspiration, pain in the joints and headache. Pelvic examination did not reveal anything to account for her condition. Blood cultures were negative for Plasmodium. The leukocyte count was 4,900, with 59 per cent polymorphonuclear neutrophils, 36 per cent lymphocytes, 3 per cent transitional mononuclear cells, 2 per cent large mononuclear cells and no eosinophils. Bang's agglutination test gave positive results at a titer of 1:200.

As the patient had for a long time consumed raw milk, the abortion was most probably the result of a latent infection with Brucella abortus. The patient was given 12 Gm. of aureomycin, 0.25 Gm. every three hours for six days. After administration of the first dose the patient's temperature became normal. The patient completely recovered and was discharged after 10 days.

CORRESPONDENCE

HEALTH INSURANCE PLAN OF GREATER NEW YORK

To the Editor:—Dr. George Baehr stated in his paper on the "Health Insurance Plan of Greater New York" (*J. A. M. A.* **143**:637 [June 17] 1950) that "a medical group on reaching its objective of 20,000 subscribers has a gross income of $460,000 a year," or $23 for each subscriber. He states further "Approximately 500,000 physician services (exclusive of those of radiologists and pathologists), from a home or office visit to a major operation, have been required per 100,000 subscribers per year," or approximately five physician services per subscriber. It appears, then, that for $23 the physicians in the Health Insurance Plan make five visits, some of which are operations, and, in addition, roentgenograms and pathologic examinations are thrown in. Besides, general operating expenses must be deducted from this amount.

Probably the services rendered by the Health Insurance Plan constitutes the "best buy" in medical service anywhere in the world, but it is made possible only because the physicians, as usual in programs of this type, are giving away a great deal of time and effort to make it work. Dr. Baehr's conclusion that "the first three years have not revealed any need for changing the basic concepts of the Health Insurance Plan of Greater New York" appears unwarranted, so long as the doctors in the plan are acting as underwriters.

LESTER SHAPIRO, M.D., New York.

TOLERANCE TO ALCOHOL

To the Editor:—Dr. Bernard P. Cronan's report (*J. A. M. A.* **143**:1040 [July 15] 1950) on reactions to small amounts of alcohol recalls the experience of Marion Sims, as related in his autobiography, "The Story of My Life" (pages 83-85). At an Independence Day celebration, when he was about nine years old, he drank "not more than two tablespoonfuls of Madeira wine" and "had to be carried to the house, in the course of half an hour, and put to bed, dead drunk." He drank no more wine until he went to South Carolina College, when he went with some friends to an oyster saloon and "indulged in a small glass of Madeira. The others drank freely; none of them seemed to feel it." When they started back to the college, he had to be held up by a man on either side. He made a conscientious effort to increase his tolerance, but with the same result each time. After several attempts he gave up the effort.

The reaction of Dr. Cronan's patient was so similar to that produced by tetraethylthiuramdisulfide (antabuse®) that one wonders whether the wife might have obtained a supply of the drug by some means and given it surreptitiously to her husband in coffee or some other vehicle.

WINGATE M. JOHNSON, M.D., Winston-Salem, N. C.

SERUM TEST FOR ACTIVE TUBERCULOSIS

To the Editor:—I would like to call attention to two errors in the editorial entitled "Serum Test for Active Tuberculosis" in THE JOURNAL, Aug. 26, 1950, page 1489.

Your editorial writer credited Rothbard and his co-workers (*Proc. Soc. Exper. Biol. & Med.* [May] 1950) with introducing the use of concentrated old tuberculin to sensitize sheep erythrocytes in the Middlebrook-Dubos test for antibodies in the serum of patients with tuberculosis. The use of old tuberculin for this purpose was begun in our laboratory at Duke University within two weeks of the time that Dr. Middlebrook and Dubos' original paper was published. Our method was published in the February issue of the *Journal of Laboratory and Clinical Medicine* in 1950, months before Rothbard's publication and before this editorial was written.

The second error refers to the claim that the hemagglutination test is a specific test for active tuberculosis. Smith and Scott reported that a percentage of normal medical students had positive hemagglutinins and an additional number became positive after an intradermal tuberculin test at the National Tuberculosis Association on April 26, 1950 in Washington, D. C.; therefore a positive test cannot be considered as proof of active tuberculosis. The final paper by Smith and Scott appears in the August number of the *American Review of Tuberculosis.*

DAVID T. SMITH, M.D., Durham, N. C.

DIAGNOSIS OF PULMONARY LESIONS

To the Editor:—An excellent résumé of diagnostic procedures employed in the clarification of pulmonary lesions discovered by mass roentgenographic survey recently appeared in THE JOURNAL (**143**:943 [July 15] 1950). Among the specific diagnostic procedures described, attention was directed to the use of the Valsalva maneuver in the visualization of arteriovenous shunts in the lungs. This procedure was described as an attempted inhalation while holding the nose and mouth. The resulting increased negative pulmonary pressure causes increased vascularity of the lung, aiding in visualization of the area of the shunt.

The physiological mechanism involved is correct; however, the maneuver described is actually the Müller procedure. In Valsalva's experiment (forced expiration with the glottis closed), the intra-alveolar pressure increases and the pulmonary vascularity decreases. In Müller's experiment (forced inspiration with the glottis closed), the intra-alveolar pressure decreases and the pulmonary vascularity increases. The importance of these procedures and the resultant effect on intra-alveolar pressure in the diagnosis of pulmonary diseases has been demonstrated by Westermark (Roentgen Studies of the Lungs and Heart, the University of Minnesota Press, Minneapolis).

HYMAN E. BASS, M.D., New York.

ACTION OF ACTH

To the Editor:—The note by Dr. Benjamin H. Archer, (*J. A. M. A.* **143**:570 [June 10] 1950), quite properly calls attention to an aspect of pituitary adrenocorticotropic hormone (ACTH) therapy that seems to have been forgotten. Briefly, Dr. Archer states that fatty infiltration of the liver has been noted by many observers in animals that have been given ACTH (Baker, B. L.; Ingle, D. J.; Li, C. H., and Evans, H. M.: *Am. J. Anat.* **82**:75 [Jan.] 1948; Li, C. H.; Simpson, M. E., and Evans, H. M.: *Endocrinology* **44**:71 [Jan.] 1949). Dr. Archer also called attention to the report by E. G. Fry (*Endocrinology* **21**:283 [March] 1937) that the adrenal gland is necessary for this phenomenon, because fatty infiltration is not induced in animals subjected to adrenalectomy. It is well known that treatment with cortisone causes the development of many of the characteristics of Cushing's syndrome. It is therefore of much theoretical and practical significance that fatty infiltration of the liver is present at autopsy in many cases of Cushing's syndrome (Sosman, M. C.: *Am. J.*

Roentgenol. **62**:1 [July] 1949; Heinbecker, P., and Pfeiffenberger, M.: *Am. J. Med.* **9**:3 [July] 1950).

We have been considering this problem for some time and have advanced the concept that ACTH and cortisone act by "occupying" or "engaging" one or more of the liver functions (Pelner, L., and Waldman, S.: A New Concept in Therapy: "Occupying" or "Engaging" One or More of the Liver Functions, *Gastroenterology*, to be published). Of course, this may not be the only way in which these endocrines act. Even then, no one can say in what manner "occupying" a liver function or causing fatty infiltration of the liver can produce remissions in certain diseases.

Some clinical examples bear out this concept. Heuch long ago noted that rheumatoid arthritis is improved during pregnancy and during episodes of hepatitis. Holbrook and his co-workers, (Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1950, p. 386) have shown that there is a pronounced increase in amino acid excretion, e. g., histidine, in patients with rheumatoid arthritis following remissions during ACTH therapy and also following remissions due to pregnancy. The excretion of histidine increased about 100 per cent after remissions due to ACTH therapy and 600 per cent after pregnancy remissions. It is well known that normal pregnancy is associated with an excretion of histidine; in fact, this is the basis of a currently used chemical pregnancy test. It is also well known that amino acids are excreted in states of hepatic dysfunction.

It was noted by Rose (Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, p. 502) that the treatment of asthmatics with ACTH caused a remarkable increase of histidine in the urine, with levels similar to those found in pregnancy.

Conn and his co-workers (*J. Lab. & Clin. Med.*, **35**:504 [April] 1950) noticed that treatment of normal persons and patients with Cushing's syndrome with ACTH caused a fall in serum cholesterol and in the esterified fraction of serum cholesterol. The rate of fall and the percentage of decrease was greater in the esterified fraction than in the total cholesterol. This phenomenon is also characteristic of hepatic insufficiency.

The concept of "occupation" of the liver function is important because other drugs besides ACTH and cortisone can do this without producing serious side effects. In order to attempt to explain the mechanism of action of these drugs, one of us (S. W.) coined the term "hyperhepatism" as being characteristic of certain disease conditions. This is also a dysfunction and is analogous to the term hypersplenism. Both of these are states inimical to the best interests of the organism. We are now engaged in applying this theoretical concept to some disease conditions and in finding drugs that will "occupy" one or the other of the many liver functions without causing the side reactions of ACTH and cortisone.

LOUIS PELNER, M.D.,
SAMUEL WALDMAN, M.D., Brooklyn.

MYELOID METAPLASIA

To the Editor:—In the paper on "Myeloid Metaplasia" published by Dr. Leon O. Jacobson and me in THE JOURNAL, Aug. 19, 1950, at the bottom of the left hand column on page 1394 the statement is made, "We are at a loss to understand. . . . only smears were examined." Because of lack of space in the paper when referring to the publication of Limarzi and Levinson, we have inadvertently left the impression that the splenic puncture which failed to reveal the diagnosis was done while the patient was under the care of Dr. Limarzi and Dr. Levinson. Since a biopsy of their patient's spleen had been done prior to their handling the case, it was not Dr. Limarzi and Dr. Levinson who failed to make the correct diagnosis after examining splenic tissue.

MATTHEW BLOCK, M.D., Chicago.

BURNS

To the Editor:—The present world situation brings to the foreground certain problems in the treatment of traumatic shock. Situations may be encountered in which little or no medical care may be available to large numbers of wounded persons during the first few hours after injury, the most critical period for the treatment of shock. Some aspects of the problem have been presented in the special article "On the Burn Problem in Atomic Warfare" by Dr. Evans appearing in THE JOURNAL, July 29, 1950, page 1143.

The importance of electrolytes in shock has been indicated by much animal experimentation. It has been shown that the administration of isotonic sodium salts in large amounts by mouth offers an effective therapeutic procedure that could be available even in the absence of medical aid. It is for the purpose of stimulating experimental and clinical studies in this field that this letter is written.

On the basis of extensive work on animals in this and other laboratories (summarized by Rosenthal, S. M., and Tabor, H.: *Arch. Surg.* **51**:241-242, 1945; *Am. J. Physiol.* **149**:449-464, 1947; for additional evidence see Fox, C. L., and Baer, H.: *Am. J. Physiol.* **151**:155-167, 1947; Harkins, H. N.: ibid. **148**:538-546, 1947; McCarthy, M. D., and others; ibid. **150**: 428-443; 1947; Reynolds, M.: ibid. **158**:418-428; 1949) the following postulates can be made:

1. Mortality studies and analyses of electrolyte changes in shock demonstrate a large sodium and fluid deficiency. For maximum survival from a fatal degree of trauma from burns, tourniquets or hemorrhage at least 10 per cent of the body weight of isotonic sodium salts is needed in the first twenty-four hours. The amounts required for optimal survival in man have not been established, and until this has been done it would seem wise to be guided by the results of animal investigation.

2. Studies of the therapeutic role of the plasma colloids or proposed plasma substitutes in the acute phases of shock are important. The beneficial effects of plasma and plasma substitutes have been widely demonstrated in the clinic, but recent animal experiments have shown that survival of the animal can be correlated with the sodium content of the administered fluid. It is of the utmost importance to evaluate further the applicability of these findings to humans.

3. The criteria usually employed for evaluation of therapy in shock may be unreliable, and much of the work in this field will not bear critical analysis. In animal experiments in which attempts have been made to correlate such tests as blood pressure, hematocrit and bleeding volume with mortality, the tests have been inadequate as an index of the ability of therapy to prevent death.

In animal experiments survival must be taken as a basis of evaluation until it has been established that other criteria will correlate with survival. Until such criteria are established comparative evaluation of therapy in the clinic must be open to question, since in civilian practice adequate cases for mortality studies are not available in one clinic within a reasonable time.

4. The poor effect of glucose alone, and of other fluids not containing sodium, has been well demonstrated in shocked animals, but this fact is not fully appreciated at the clinical level. Likewise, the high toxicity of potassium salts to the shocked animal would contraindicate the use of fruit juices in the acute phases of shock.

5. There are many other factors besides fluids and electrolytes which affect the outcome of traumatic shock and which deserve active study. Toxic factors have been demonstrated by several methods, but their identity and means of combating them are unsolved problems. In hemorrhage, in addition to electrolyte therapy the replacement of red blood cells was shown to be an important factor, thus confirming the accepted superiority of whole blood where extensive blood loss has occurred. Studies on the preservation of whole blood and on the role of whole blood in other forms of shock are important aspects of our national blood collection program.

Animal experiments have proved that the fluid and electrolyte disturbance is the most critical for survival. It is of importance that in the earlier stages of shock oral therapy is as

effective as intravenous; with the mass casualties which are envisioned in modern warfare, oral administration of isotonic sodium salts could afford a practical means of emergency treatment that could be administered before collapse occurs. With disruption of facilities and personnel it might be the only therapy that would be available to many victims. The experimental basis is well founded, and additional study, particularly at the clinical level, is urgently needed. Large scale programs for the use of blood and blood substitutes are under way; the proposed studies would not detract from these programs but would supply information that is basic for the proper management of shock.

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Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Acts: Meaning of "As Taught in Chiropractic Schools or Colleges."—The defendant was charged in two counts with violating the Business and Profession's Code relating to the unlicensed practice of medicine. From a conviction, the defendant appealed to the appellate department, superior court, Los Angeles County, California.

This is another case, said the appellate division, in which a licensed chiropractor, prosecuted for violation of the Business and Profession's Code relating to medical practice, presents his chiropractic license as a sufficient authority for what he has done and a defense to the prosecution. We conclude that the defense is not sufficient here. The evidence shows that on the date charged in the first count the defendant went to see a patient in response to a call the previous day and found her in a serious condition of uterine hemorrhage following a menstrual period. After examining the patient and taking her pulse and blood pressure, the defendant concluded that she was in a condition almost of shock and that the lost blood must be replaced immediately. He packed her uterus with gauze to stop the hemorrhage, an operation which took 20 minutes, and then ordered blood plasma by telephone from a laboratory. The laboratory brought the plasma and necessary equipment, and the defendant himself made the transfusion, which was done by inserting a needle into the vein of her arm and connecting it with a bottle of plasma. Later, on the same day, he also injected into her flesh with a hypodermic needle some fluid, the nature of which the patient and her husband did not know, but which the defendant testified was liver extract. He also gave her some white pills, which the defendant testified were probably parathyroid tablets. The second count relates to the next day. On this occasion he gave her another injection with a hypodermic needle of something which appears to have been liver extract.

The Chiropractic Act, said the appellate division, is in the nature of an exception to the Business and Profession's Code and is a complete defense here if the defendant has not exceeded the authority of his chiropractic license. That authority is fixed by section 7 of the Chiropractic Act, which provides that licenses issued under it "shall authorize the holder thereof (1) to practice chiropractic in the state of California as taught in chiropractic schools and colleges, and, also, (2) to use all necessary mechanical, and hygienic and sanitary measures incident to the care of the body, but (3) shall not authorize the practice of medicine, surgery, osteopathy, dentistry or optometry, nor the use of any drug or medicine now or hereafter included in materia medica." Considerable time was consumed at the trial by the introduction of evidence by the defendant to show that what he did is now taught in chiropractic schools and colleges. This matter, said the appellate division, was discussed in People v. Fowler (84 P. [2d] 326, *J. A. M. A.* 113:711 [Aug. 19] 1939), where it was held that section 7 authorized, by the provision numbered as (1) above, nothing that was not chiropractic, as that term was understood in 1922, when the act was passed, and that the term was then defined as "a system of (or) the practice of adjusting the joints, especially of the spine, by hand for the curing of disease." We further said in the Fowler case, regarding chiropractic schools: "The effect of the words 'as taught in chiropractic schools or colleges' is not to set at large the signification of 'chiropractic,' leaving the schools and colleges to fix on it any meaning they choose. Were the word 'chiropractic' of unknown, ambiguous or doubtful meaning, this clause, 'as taught' etc., might serve to provide a means of defining or fixing its signification, but there is here no such lack of clarity. The scope of chiropractic being well known, the schools and colleges, so far as the authorization of the chiropractor's license is concerned, must stay within its boundaries; they cannot exceed or enlarge them. The matter left to them is merely the ascertainment and selection of such among the possible modes of doing what is comprehended within that term as may seem to them best and most desirable, and so the fixing of the standards of action in that respect to be followed by chiropractic licensees." In other words, the appellate division continued, the limits of permissible practice by the holder of a chiropractic license do not extend beyond the scope of chiropractic as that term was understood and defined in 1922, and the ambitious attempts of chiropractic schools or colleges to extend them by teaching other subjects under the guise of chiropractic must fail, so long as the statute remains as it is now.

None of the acts of the defendant come within the scope of chiropractic as limited above, and hence they are not within the first authorization as we have above numbered the two authorizing clauses of section 7, the appellate division continued. As was said in the Fowler case, the limiting clause of section 7, numbered above as (3), prevents a chiropractic licensee from using drugs or medical preparations or severing or penetrating the tissues of human beings. Perhaps the packing of the uterus might be classed as one of the described measures incident to the care of the body listed in the second authorization. Of this we have some doubt, in view of the purpose for which it was done, which hardly suggests that it was "incident to the care of the body." But, however that may be, it is clear that the other acts done, the administration of blood plasma and the hypodermic injection, when done for the treatment of ailment, disease or other physical condition, are not such mechanical, hygienic or sanitary measures incident to the care of the body, as may be used by chiropractic licensees. At least one of them was done on the occasion charged in each count, and the evidence in this respect is sufficient to support the conviction on each.

The defendant next contended that what he did was not the practice of medicine or surgery, and seems to assume that if it is not, he may engage in it under his chiropractic license. Even if this premise were conceded, the conclusion would not necessarily follow, said the appellate division. The chiropractic act declares that chiropractic licensees shall not engage in certain practices, but does not imply, and section 7 does not provide, that such licensees may engage in every sort of practice not listed as forbidden.

The defendant finally seemed to contend that what he had done was of an emergency character. Under the interpretations of the word "emergency" and the facts of the present case, the appellate division said, the jury could not well do otherwise than find that there was no emergency. The defendant had been called the day before he came, and, though it does not appear he was then told the nature of the patient's ailment, he learned it, according to his testimony, as soon as he saw her. He consumed 20 minutes in packing her with gauze, and some time elapsed thereafter before he did anything else, for not till after that was done did he telephone for the blood plasma and he then had to await its arrival. During that time he could have telephoned to and summoned a properly qualified physician, some of whom he knew, but he did not do so. That he was not proceeding on the emergency theory is apparent from this testimony given by him on cross examination: "Q. At no time did you call a doctor, that is, a medical doctor? A. No, I felt I was capable enough to take care of her."

Accordingly the judgment of conviction of the defendant chiropractor was affirmed.—*People v. Mangiagli, 218 P. (2d) 1025 (Calif., 1950).*

CURRENT MEDICAL LITERATURE

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

39:799-944 (June) 1950

Cardiac Manifestations in Friedreich's Ataxia. G. W. Manning.—p. 799.
H. Form of QRS Complex in Bundle Branch Block and in Anterolateral Infarction. G. B. Myers.—p. 817.
Invisible Conduction Leading to Errors in Electrocardiographic Interpretation. H. H. Bix.—p. 828.
Anomalous Motion of Heart Border in Subjects with Gallop Rhythm or Third Heart Sounds. J. P. Brady and F. Taubman.—p. 834.
Electrokymographic Studies of Relationship Between Electrical and Mechanical Asynchronism in Cardiac Cycle. P. Samet, H. Mednick and J. B. Schwedel.—p. 841.
*Subendocardial Myocardial Infarction with Special Reference to Electrocardiographic Changes. P. N. G. Yu and J. M. Stewart.—p. 862.
Discovery of Organic Mercurial Diuretics. A. Vogl.—p. 881.
Cardiac Arrhythmias in Myocardial Infarction. M. J. Goldman.—p. 884.
Cor Biatriatum Triloculare. B. Richman.—p. 887.
*Auscultatory Evidence of Cardiac Rupture. F. R. Nuzum.—p. 909.

Subendocardial Myocardial Infarction.—Yu and Stewart report seven patients with subendocardial infarction of the left ventricle observed clinically and confirmed at autopsy. Five of the patients were given the correct diagnosis ante mortem on the basis of the electrocardiographic changes; bundle branch block obscured the findings in the other two. Sixteen patients with electrocardiographic changes highly suggestive of subendocardial myocardial infarction of the left ventricle have also been observed. The outstanding clinical features in the 23 patients with subendocardial myocardial infarction were evidence of previous heart disease, history of hypertension and angina pectoris, presence of severe substernal pain and reduction of blood pressure, signs of congestive heart failure and characteristic electrocardiographic changes. The electrocardiographic changes were (1) marked depression of RS-T segment in leads 1, 2, aV_L, and V_{3-6} and (2) definite elevation of RS-T segment in aV_R. The RS-T segment changes usually persist for several days. Without the aid of electrocardiograms, one cannot possibly differentiate this type of infarction from the ordinary type of anterior or posterior myocardial infarction with transmural or predominantly subepicardial lesion. Subendocardial myocardial infarction may or may not be associated with coronary occlusion. In three of the five isolated cases reported in the literature there was no evidence of occlusion of the coronary arteries. Four of the authors' patients had coronary occlusion. The postmortem examination and the changes in the electrocardiograms of the patients with subendocardial myocardial infarction indicate that the commonest sites of the infarcts are in the inner aspect of the anterolateral wall and the interventricular septum of the left ventricle. The prognosis should be guarded, since a 30 per cent mortality was observed in patients with this lesion.

Auscultatory Evidence of Cardiac Rupture.—Nuzum reports a woman, aged 84, who died in the hospital on the fourth day following the onset of severe cardiac symptoms. Shortly before the patient's death the author, with the stethoscope over the apex, heard several cycles of normal sounds and then a loud, harsh murmur that filled the entire systolic period. The murmur began and ended abruptly. It was followed by four further similar murmurs of diminishing intensity. The murmur then disappeared, and the following four cycles of the heart were muffled and poorly defined. There was no detectable change in rhythm. The patient had a convulsion and died. The author diagnosed a ruptured ventricular wall. This was substantiated at necropsy. The sounds he heard were different than those noted by Reznikoff in a case described in 1922.

American Journal of Medicine, New York

8:689-828 (June) 1950

Symptom Patterns of Hyperventilation Syndrome. R. L. Rice.—p. 691.
Pulmonary Hypertension in Chronic Pulmonary Emphysema. C. W. Borden, R. H. Wilson, R. V. Ebert and H. S. Wells.—p. 701.
*Role of Nitrogen Mustard Therapy in Treatment of Lymphomas and Leukemias. C. L. Spurr, T. R. Smith, M. Block and L. O. Jacobson.—p. 710.
*Hypercalcemia in Osteolytic Metastatic Cancer of Breast. A. J. Swyer, J. S. Berger, H. M. Gordon and D. Laszlo.—p. 724.
Use of Paraffin-Embedding Methods in Cytologic Study of Various Bodily Secretions. N. R. Bothereau.—p. 733.
Arthro-Onychodysplasia: Hereditary Syndrome Involving Deformity of Head of Radium, Absence of Patellas, Posterior Iliac Spurs, Dystrophy of Finger Nails. A. M. Brixey Jr. and R. M. Burke.—p. 738.

Nitrogen Mustard in Lymphomas and Leukemias.—Spurr and his co-workers review the clinical course of 95 patients with lymphoma and leukemia following treatment with methyl bis beta-chlorethyl amine hydrochloride. These included 57 cases of Hodgkin's disease, 10 cases each of lymphosarcoma and chronic lymphatic leukemia, five cases of follicular lymphoblastoma, six cases of chronic myeloid leukemia and nine cases of other related diseases. They noted clinical improvement and palliation in Hodgkin's disease, lymphosarcoma and chronic lymphatic leukemia. Irradiation should be continued as long as feasible in the control of local tumor masses, with nitrogen mustard as adjunctive therapy for suppression of multicentric dissemination of the disease. Nitrogen mustard cannot be recommended as the sole therapeutic agent in lymphoma. As a rule the patient who responds well to irradiation will also respond well to nitrogen mustard. Toxic manifestations of nitrogen mustard therapy were of significance only in 5 terminal cases in which anemia, leukopenia and purpura developed. These symptoms, as the presenting toxic features of lymphoma prior to nitrogen mustard therapy, were frequently controlled for considerable periods. The response of lymphosarcoma and chronic lymphatic leukemia is of sufficient promise to suggest continued use of nitrogen mustard therapy in selected cases.

Hypercalcemia in Osteolytic Metastatic Cancer of Breast.—Swyer and his associates discuss the hypercalcemic syndrome occurring when bone metastases develop in patients with carcinoma of the breast. They observed this syndrome in 10 of 71 patients with metastatic osteolytic cancer of the breast. A triad consisting of gastrointestinal disturbances, mental changes and renal impairment was usually seen. When the clinician is confronted with this triad in a patient with widespread osteolytic lesions, it is important that he consider the possibility of spontaneous hypercalcemia, but the possibility that the prior administration of vitamin D or of sex hormones to the patient may be the etiologic factors should also be investigated. The serum calcium determinations were done in duplicate with the Clark and Collip modification of the Kramer-Tisdall method. In the 10 patients values ranged from 12.3 mg. to 20 mg. per 100 cc. Therapy was directed toward bringing the excessively high calcium values down to normal limits, chiefly by forcing fluids and by low calcium diets.

Response to treatment was not always dramatic, but improvement was invariably associated with a drop in serum calcium levels to normal, a decrease in blood urea nitrogen and creatinine levels, a decrease in nausea and vomiting and an increase in urinary output. This improvement lasted one week to three months. Preventive measures consist of mobilization of patients whenever possible, aided by orthopedic procedures, oscillating beds, physical therapy, improved nutrition and fluid intake, as well as by judicious selection and dosage of analgesic drugs. Preventive or therapeutic measures do not change the ultimate prognosis for the patient, but they may help to make life more comfortable. Although the dissolution of bone by metastases may be the most important factor in the etiology of the hypercalcemia, prolonged bed rest, pathologic fractures and malnutrition due to anorexia and the side effects of pain-relieving drugs can be contributing factors.

American J. Obstetrics and Gynecology, St. Louis

59:1183-1420 (June) 1950

Ideals, Responsibilities, and Reward of the Obstetrician. J. R. Bloss. —p. 1183.
Carcinoma of Cervix Associated with Pregnancy. W. O. Johnson and B. J. Weinfurtner.—p. 1189.
Pelvic Tumors Complicating Pregnancy. C. H. Davis.—p. 1202.
Salvage Possibilities in Threatened Abortion. E. D. Colvin, R. A. Bartholomew, W. H. Grimes and J. S. Fish.—p. 1208.
Early Extrauterine Pregnancy. D. N. Henderson and J. L. M. Bean. —p. 1225.
Management of Placenta Previa: Review of 201 Cases with Emphasis on Conservatism. H. W. Honson.—p. 1236.
Topographic Urethrography. T. L. Ball.—p. 1243.
Stress Incontinence of Urine with Special Reference to Failure of Cure Following Vaginal Operative Procedure: Joseph Price Oration. C. D. Read.—p. 1260.
Theca-Cell Tumors. D. W. Sparling.—p. 1279.
Nutritional Value of Endometrium for Implantation and in Habitual Abortion. E. C. Hughes, A. W. Van Ness and C. W. Lloyd.—p. 1292.
Sarcoma of Uterus: Analysis of 42 Cases. K. T. MacFarlane.—p. 1304.
Management of Excessive Fluid Retention in Normal and Toxemic Pregnancies. J. R. Willson and W. R. Penman.—p. 1321.
Hyperplasia of Endometrium, Its Relationship to Hypertrophy and Hyperplasia of Uterine Vessels. O. H. Schwarz and A. Sherman.—p. 1330.
Vitamin A Therapy in Treatment of Vulvar Leucoplakia. M. N. Hyams and P. D. Gallaher.—p. 1346.
*Pathological Aspects of Hydatidiform Mole and Choriocarcinoma. E. Novak. —p. 1355.
Genital Cancer Among Women: Factors Affecting Its Control in Urban Population. A. W. Diddle.—p. 1373.
Pregnancy Changes in Uterine Cervical Ganglia (Frankenhäuser) as Causative Factors of Vascular Hypertension in Toxemia. J. Hofbauer. —p. 1383.

Hydatidiform Mole and Choriocarcinoma.—Novak reports a laboratory study of material from 70 cases of hydatidiform mole and 30 cases of choriocarcinoma. The early trophoblast of normal pregnancy exhibits certain characteristics like those of cancer. It infiltrates and destroys the maternal tissue and exhibits a physiologic type of metastasis in the form of villous and trophoblastic deportation to the lungs. The normal restriction of trophoblastic inroads into the uterus, unlike cancer, and the regression of deported trophoblast can be explained only on the assumption of a local and probably also a systemic defense mechanism. Trophoblastic invasion of the uterine wall and of the decidua is seen in both normal pregnancy and benign hydatidiform mole. The histologic pictures thus produced have been frequently misinterpreted as choriocarcinoma. Such errors are so common that they have vitiated the statistics on choriocarcinoma. It is not nearly so common as some reports have indicated and is far more malignant than indicated by reports which probably included many benign choriomatous lesions. The microscope, and not the biologic test, is the arbiter of diagnosis. Trophoblastic proliferation is a constant feature of even the most benign hydatidiform mole. Examination of the extruded or the curetted material does not give a true picture. One is not justified in making the diagnosis of choriocarcinoma in the presence of a well preserved villous pattern. Where trophoblastic proliferation is excessive, or where there is a pronounced intravascular penetrative tendency, the diagnosis of penetrative, invasive or destructive mole or chorioadenoma destruens may be justified, but the morphologic characteristics in this group often do not differ from those of the benign group. Moles of this type do not metastasize, though they may occasionally invade the vagina or the parametrium, and they can be cured by hysterectomy. They should not be considered as belonging in the malignant group. If, after a thorough evacuation of the mole, the reaction to the biologic test remains positive or perhaps increases, with persistence of bleeding and subinvolution, hysterectomy is justified. In most such cases examination of the removed mole will show residual molar tissue deep in the uterine wall, beyond the reach of the curet, and not choriocarcinoma. In a few cases, not determinable by a method other than hysterectomy, genuine choriocarcinoma will be revealed. This consideration, plus the fact that such residual trophoblastic tissue can later give rise to choriocarcinoma justifies hysterectomy.

American Journal of Public Health, New York

40:787-916 (July) 1950. **Partial Index**

Natural Childbirth Program. H. Thoms and R. H. Wyatt.—p. 787.
Blueprint for Changing Concepts in Antepartum Care. E. M. Gold, M. A. Losty and H. M. Wallace.—p. 792.
What Happens to Prematures. H. Koenig.—p. 803.
Factors of Importance in Use of Triethylene Glycol Vapor for Aerial Disinfection. W. Lester Jr., S. Kaye, O. H. Robertson and E. W. Dunklin.—p. 813.
Pattern of Organized Medical Care Programs in Rural County. M. I. Roemer and E. A. Wilson.—p. 821.
Experience with Gelfoam Biopsy in Routine Cancer Diagnosis. A. Angrist and A. Pollak.—p. 827.
Technics and Circumstances in Bacteriologic Diagnosis of Tuberculosis. J. N. Abbott.—p. 833.
Role of Case Finding in Syphilis Control Today. J. J. Wright and C. G. Sheps.—p. 844.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

63:797-988 (June) 1950

*Stannic Oxide Pneumoconiosis. C. C. Dundon and J. P. Hughes.—p. 797.
Roentgenographic Changes in Pulmonic Stenosis: Report of 9 Cases. R. F. Healey, L. Dexter, M. Elkin and M. C. Sosman.—p. 813.
Tuberculoma of Diaphragm: Report of 1 Case. C. L. Tu and C. K. Hsieh.—p. 822.
Roentgenological and Clinical Correlation of Acute Abdominal Disease: Analysis of 100 Cases. B. S. Brown.—p. 828.
Gaucher's Disease in Bone. J. Kulowski.—p. 840.
Multiple Myeloma: Analysis of 21 Proved Cases. S. White and A. J. Tillinghast.—p. 851.
Osteopetrosis: Report of Case and Review of Recent Literature. E. L. Seigman and W. L. Kilby.—p. 865.
Teratomatous Tumors of Spinal Canal: Report of 2 Cases. J. R. Hannan and R. M. Geist Jr.—p. 875.
*Cancer of Thyroid: Ten to Twenty Year Follow-Up. H. F. Hare and F. A. Salaman.—p. 881.
*Results from Use of Radioactive Iodine, I^{131}, in Diagnosis and Treatment of Toxic Goiter. S. C. Werner, L. D. Goodwin, E. H. Quimby and C. Schmidt.—p. 889.
Clinical Course of 200 Cases of Angina Pectoris Treated with Roentgen Irradiation of Adrenals (1937-1947). W. Raab.—p. 895.
Use of Cinefluorographic Method for Teaching Purposes. L. Reynolds, K. E. Corrigan and H. S. Hayden.—p. 902.

Stannic Oxide Pneumoconiosis.—Dundon and Hughes observed in a man aged 72, with carcinoma of the prostate, an unusual chest roentgenogram, consisting of uniform mottling of both lung fields by discrete, fine, dense shadows. There were no respiratory symptoms, and the vital capacity was 85 per cent of normal. A history of exposure to dust and fumes from a detinning furnace for a period of 18 years was obtained, this exposure having terminated in 1930, 18 years prior to examination. The microscopic appearance of the lungs was that of moderate anthracosis. A thin lung slice revealed on a roentgenogram dense perivascular, peribronchial and subpleural shadows. Examination of incinerated sections under polarized light disclosed compact accumulations of bright yellowish brown particles, which were soluble in hydrochloric acid in the presence of powdered zinc and gave a positive spot reaction for tin. Spectrographic analysis disclosed abnormally large amounts of tin in the lungs. A pattern identical with that of stannic oxide (SnO_2) was obtained by roentgen-ray diffraction analysis of dried lung tissue powder. The lungs contained 1.46 per cent stannic oxide (dry weight), and the ash was composed of 13.4 per cent stannic oxide. The authors conclude that inhalation of stannic oxide for long periods produces benign, symptomless pneumoconiosis but no fibrosis. Stannic oxide is radiopaque, and accumulation of particles in the regions of perivascular,

peribronchial and subpleural lymphatics produces sharp shadows on the chest roentgenogram. Tin deposited in the lungs in this form is nontoxic systemically.

Cancer of Thyroid: Prolonged Follow-Up.—Hare and Salzman report observations on 198 cases of cancer of the thyroid in which a diagnosis was made prior to 1936. These included 49 cases of fetal adenoma with invasion, 48 of papillary adenocystoma, 38 of papillary adenocarcinoma, 24 of alveolar adenocarcinoma, nine of giant cell carcinoma and 30 of small cell carcinoma. The authors found that cancer cannot be excluded on the basis of clinical evaluation. They may arise in preexisting tumors. Single thyroid nodules are malignant in 10 per cent of the patients coming to operation. Radical surgery followed by roentgen therapy is the treatment of choice, except in the alveolar adenomas, which the authors do not regard as clinically malignant. A tumor dose of 4,800 to 6,000 r is necessary to control the growth of papillary adenocystoma with invasion, papillary adenocarcinoma and small cell carcinoma. Giant cell carcinoma does not respond to these doses. Radium is a useful adjuvant in the treatment of residual and infiltrative tumors, especially in alveolar adenocarcinoma. An attempt should be made to give at least 6,000 gamma roentgens to the periphery of the tumor. Ten to 20 year follow-up studies show that good results were obtained in alveolar adenomas with malignant change, in papillary adenocystoma with invasion, and in papillary adenocarcinoma. Poor results were obtained in alveolar adenocarcinoma and in giant cell carcinoma. The failure of treatment of the small cell type of cancer of the thyroid is usually a result of its widespread infiltration at the start of treatment. Radioactive iodine will probably prove of value in the more slowly growing types. There is no reason to use it in primary alveolar adenoma with invasion, since the results of surgery alone are satisfactory. It should be valuable in papillary adenocystomas and papillary adenocarcinomas.

Results from Radioactive Iodine, I^{131}, in Toxic Goiter.—Werner and his associates began treatment of toxic goiter with the eight day half-life isotope of iodine, I^{131}, which became available three years ago. Concurrently they began a diagnostic study with tracer doses of I^{131}. All ward patients for whom a basal metabolism test was ordered were also given a tracer dose of 40 microcuries of I^{131} by mouth. Uptake was measured over the thyroid 24 hours later. A total of 175 patients were tested, of whom 113 ultimately were shown to be euthyroid; the others had hyperthyroidism, hypothyroidism or some other thyroid disorder. Previous studies had revealed that the normal radioiodine uptake at 24 hours is between 10 and 35 per cent. A separate study of radioiodine uptake in hyperthyroidism had revealed that 6 per cent of patients with toxic goiter show uptakes less than 35 per cent. Thus there is an overlap, but the overlap of basal metabolism readings between subjects with toxic goiter and normal subjects is at least as great, if not greater. Basal metabolism tests may have to be repeated to rule out emotional effects. This is unnecessary with the tracer test. Uptake may be arrested as a result of a preceding iodine administration, and 12 weeks may have to elapse before the function of iodine uptake is resumed. The tracer technic with radioiodine gives a more accurate estimate of thyroid function than does the basal metabolism test. The limited total radiation given at first resulted in a rather high failure rate. The dosage of 100 microcuries per estimated gram of gland weight was then given to 63 patients with toxic goiter. After a single dose of I^{131}, remission occurred in 36 of the 63 patients (57 per cent); 5 per cent were made hypothyroid. A second dose administered to those who had not responded four months or more after the initial therapy brought the total in remission to 81.3 per cent and the number with hypothyroidism to 6 per cent. After a third dose to those not yet in remission, the final total in remission was 90 per cent, while four patients, or 6.3 per cent, were now apparently permanently hypothyroid. Thus 96.3 per cent were relieved of toxicity of hyperthyroidism or were made hypothyroid and only 3 per cent failed to respond and were treated surgically. Complications other than hypothyroidism were negligible.

Am. Practitioner & Digest of Treatment, Philadelphia

1:561-672 (June) 1950. **Partial Index**

Gold Poisoning and Disseminated Lupus Erythematosus. L. Castleman and R. A. Mandelbaum.—p. 561.
Diagnosis of Chronic Active and Chronic Inactive Hepatitis. B. T. Fein.—p. 573.
Validity of Skin Test in Diagnosis of Chronic Undulant Fever. C. F. Baumeister and D. D. Darling.—p. 581.
Present Day Therapy of Anuria. F. G. Harrison and H. L. Wares.—p. 584.
Psychotherapy in General Practice. W. C. Hulse and L. Lowinger.—p. 588.
Rheumatoid Arthritis and Its Treatment. F. Kauffmann.—p. 602.
Aureomycin: Its Topical Use in Cutaneous Pyogenic Infections and Its Sensitizing Potentialities. J. M. Siegel and E. T. Schantz.—p. 608.
Observations on Use of Bacterial Antigens in Treatment of Asthma: Brief Critical Review. O. Swineford Jr.—p. 612.
Ocular Manifestations of Sarcoidosis. J. A. Van Heuven.—p. 619.
Infectious Mononucleosis: with Hepatic Dysfunction, Thrombocytopenic Purpura, and Isolated Peripheral Nerve Palsy. R. S. Wallerstein and L. Madison.—p. 624.
Physiology of Normal Kidney: Clinical Applications. H. L. White.—p. 630.

Archives of Ophthalmology, Chicago

43:967-1136 (June) 1950

*Effect of Dibenamine® in Chronic Simple Glaucoma. S. Bloomfield and H. Haimovici.—p. 969.
Studies on the Crystalline Lens: I. Technic for In Vitro Culture of Crystalline Lenses and Observations on Metabolism of Lens. F. C. Merriam and V. E. Kinsey.—p. 979.
Cyclopia with Complete Separation of Neural and Mesodermal Elements of Eye: Report of Case. A. M. Barber and R. J. Muelling Jr.—p. 989.
Cholinesterase Activity in Ocular Tissues and Fluids. A. deRoetth Jr.—p. 1004.
Osmotic Pressure of Extraocular and Intraocular Fluids. A. J. Schaeffer.—p. 1026.
Blindness Among Practicing Physicians. A. H. Keeney and V. T. Keeney.—p. 1036.
Amino Acid Composition of Lens Proteins of Bovine Eye. A. J. Schaeffer and J. D. Murray.—p. 1056.
Clearing Effect of Transplanted Cornea on Opacity of Recipient Cornea. M. Fine.—p. 1065.
Color Photography of Eyeground: Report of Improved Technic. P. Tower.—p. 1074.

Dibenamine® in Simple Glaucoma.—Bloomfield and Haimovici report the effects of dibenamine® (N,N-dibenzyl-beta-chloroethylamine) on eyes with chronic simple glaucoma. Dibenamine® administered intravenously reduced the tension in each of the 18 eyes with chronic simple glaucoma, many of which had not responded satisfactorily to cholinergic drugs. This hypotensive effect was generally maximal within six hours after administration of the drug and then gradually disappeared in all but one eye in 20 to 48 hours. The necessity for the administration of dibenamine® by slow intravenous drip and its pronounced systemic effects greatly limit the usefulness of the drug in the routine treatment of chronic simple glaucoma. The hypotensive action of dibenamine® in eyes with chronic simple glaucoma indicates the potential therapeutic value of a newly developed group of sympatholytic drugs and may throw more light on the role of the autonomic nervous system in the pathogenesis of that disease.

Archives of Physical Medicine, Chicago

31:367-418 (June) 1950

Latent Period of Muscular Contraction. A. Sandow.—p. 367.
*Use of Electromyography in Diagnosis of Neuromuscular Disorders. O. L. Huddleston, J. G. Golseth, A. A. Marinacci and E. Austin.—p. 378.
Care of Upper Extremity Paralysis in Poliomyelitis. K. G. Hansson.—p. 387.
Effect of Paralysis of One Lower Extremity on Bone Growth: Preliminary Report. G. Gullickson Jr., M. Olson and F. J. Kottke.—p. 392.
Progressive Resistance Exercise Apparatus for Physical Rehabilitation of Patients with Amputations, Fractures and Paralyses of Lower Extremity. F. Friedland and M. M. Couture.—p. 401.

Electromyography in Diagnosis of Neuromuscular Disorders.—Huddleston and his associates believe that the electromyograph will be an instrument as valuable to the physiatrist, the neurologist, the neurosurgeon and the orthopedic surgeon as the electrocardiograph is to the internist. Electromyography detects the electrical potentials of skeletal muscles associated with the contraction of the muscle fibers. The authors discuss

the equipment and technic of the method and describe the electromyographic characteristics of normal and abnormal muscular responses. The combination of electromyographic data with other clinical data facilitates the differential diagnosis of such conditions as primary muscular dystrophies and atrophies; upper and lower neuron diseases; rigidity and spasticity of skeletal muscles; physiologic block and organic nerve lesions; hysterical paralysis or malingering and organic paralysis; backache of acute or chronic postural strain, and that of compression lesions.

Blood, New York

5:499-596 (June) 1950

Transmission of Antianemic Principle Across Placenta and Its Influence on Embryonic Erythropoiesis: II. Comparison of Effect of Liver Extract and Pteroylglutamic Acid (PGA). O. P. Jones and A. Smith.—p. 499.
Experimental Anemias in Rat: I. Macrocytic Anemia in Chronic Pteroylglutamic Acid Deficiency and After Splenectomy in Bartonella Muris Infection. E. Kodicek and K. J. Carpenter.—p. 522.
Id.: II. Effect of Various Sulfonamides in Producing Pteroylglutamic Acid Deficiency and Pteroylglutamic Acid Activity of Test Substances. E. Kodicek and K. J. Carpenter.—p. 540.
*Dangerous Universal Donors: II. Further Observations on In Vivo and In Vitro Behavior of Isoantibodies of Immune Type Present in Group O Blood. D. M. Ervin, R. M. Christain and L. E. Young.—p. 553.
Thrombopathic Thrombocytopenia: Successful Transfusion of Blood Platelets. E. O. Hirsch, J. Favre-Gilly and W. Dameshek.—p. 568.
Sternal Marrow Aspiration of Amyloid in Multiple Myeloma. S. Turbowitz.—p. 581.

Dangerous Universal Donors.—Ervin and his associates say that the characteristics of potentially dangerous group O plasma have not been fully elucidated. In their experience, the anti-A antibodies encountered in plasma of "dangerous universal donors" have been of an "immune" type. They have previously reported a severe prolonged hemolytic reaction in a group A (subgroup A_3) recipient of group O blood containing alpha antibodies of immune type. They cite three additional hemolytic reactions following transfusions of group O plasma into group A (subgroup A_3) recipients. The hemolytic reactions were severe. In one case, 10 cc. of a commercial preparation of soluble A and B factors had been added to 500 cc. of whole blood prior to the transfusion. The reaction which ensued might have been even more serious had not this material been added. The anti-A antibodies in the serum of the dangerous universal donors causing the hemolytic reactions fixed complement, acted as hemolysins, were difficult to neutralize with soluble A and B factors and were capable of giving positive Coombs reactions; their ability to agglutinate A cells was enhanced by the presence of normal human serum. These characteristics were similar to those observed in serum from donors known to be actively immunized against the A factor, but the stimulus for development of "immune" anti-A antibodies in the dangerous group O donors was not apparent. Small amounts of immune A antibody were consistently demonstrated in 12 of 100 random group O serums which, after neutralization, produced indirect Coombs reactions with A_1 cells and agglutinated A_1 cells suspended in compatible normal human serum. The authors discuss screening procedures for elimination of dangerous group O donors.

Canadian J. of Research. Medical Sciences, Ottawa

28:69-134 (June) 1950. **Partial Index**

B-Glucuronidase of Rabbit Polymorphonuclear Leukocytes. R. J. Rossiter and E. Wong.—p. 69.
Use of Oleic Acid-Albumin Agar Medium for Study of Streptomycin Resistance of Mycobacterium Tuberculosis. C. O. Siebenmann.—p. 80.
*Comparison of Sternal and Spinous Process Marrow. R. A. Polson and E. A. Packham.—p. 92.
Effect of Niacin on Pyridine Nucleotide Content of Human Blood Cells in Anemia. M. C. Blanchaer, D. E. Bergsagel, P. Weiss and D. E. Jefferson.—p. 97.
Uptake of Radioactive Phosphorus by Influenza Virus A (PR8 Strain). A. F. Graham and L. McClelland.—p. 121.

Comparison of Sternal and Spinal Process Marrow.—Polson and Packham performed sternal marrow aspirations on 11 healthy laboratory technicians and interns and spinous process aspirations on 12 similar persons. Observations revealed a close similarity between marrow from the spinous process and that from the sternum. Simultaneous sternal and spinous process punctures were performed on 13 patients with various hemopoietic diseases. The results showed that a similarity between the sternal marrow and marrow extracted from the spinous processes exists also in various pathologic conditions. Each patient who underwent both sternal and spinous process marrow puncture was questioned as to his preference. The spinous process procedure was preferred in the great majority of the cases. In a small number no difference in discomfort was noted, but in no case was sternal puncture preferred. Since spinous process puncture gives the same information as sternal puncture and causes less discomfort, it should be the procedure of choice.

Endocrinology, Springfield, Ill.

46:505-598 (June) 1950. **Partial Index**

Effect of Cortisone Acetate upon Growth of Walker Rat Carcinoma and upon Urinary Non-Protein Nitrogen, Sodium, Chloride and Potassium. D. J. Ingle, M. C. Prestrud and K. L. Rice.—p. 510.
Metabolism of Steroid Hormones: Isolation of 13 Steroid Metabolites from Patient with (Probable) Adrenal Hyperplasia. A. M. Miller and R. I. Dorfman.—p. 514.
Ascorbic Acid Content of Adrenal Glands of Young Albino Rats After Cold and Other Stresses. E. Irwin, A. R. Buchanan, B. B. Longwell and others.—p. 526.
Activation of Adenchypophysis by Intravenous Injections of Epinephrine in Atropinized Rabbit. C. H. Sawyer, J. E. Markee and J. W. Everett.—p. 536.
Interference with Wound Healing by Local Action of Adrenocortical Steroids. B. L. Baker and W. L. Whitaker.—p. 544.
In Vitro Reaction of Cells to Adrenal Cortical Steroids with Special Reference to Lymphocytes. J. D. Feldman.—p. 552.
Follicle-Stimulating Hormones of Anterior Pituitary of Sheep and Hog. H. B. van Dyke, S. Y. P'an and T. Shedlovsky.—p. 563.

Gastroenterology, Baltimore

15:1-184 (May [Part I]) 1950

Comparison of an Anion Exchange Resin and Aluminum Hydroxide Gel in Treatment of Peptic Ulcer. C. W. Wirts, B. H. Sullivan and W. C. Hemmerly.—p. 1.
Effects of Sympathectomy on Motility of Human Gastrointestinal and Biliary Tracts. J. R. Bingham, F. J. Ingelfinger and R. H. Smithwick.—p. 6.
Effects of Sympathectomy on Abdominal Pain in Man. J. R. Bingham, F. J. Ingelfinger and R. H. Smithwick.—p. 18.
*Normal Intestinal Bacteria in Ulcerative Colitis. H. Seneca and E. Henderson.—p. 34.
*Hepatic Function in Portal Cirrhosis. W. E. Ricketts, J. B. Kirsner, D. D. Kippen and W. L. Palmer.—p. 40.
Hepatic Function in Weil's Disease. K. Sterling.—p. 52.
*Mortality in Homologous Serum Hepatitis. H. H. Steele.—p. 59.
Acute Diverticulitis of Cecum. S. D. Kron and J. Specter.—p. 62.
X-Ray Differentiation Between Benign and Malignant Gastric Lesions. G. S. Schwarz.—p. 67.
Amyloidosis Associated with Chronic Ulcerative Colitis. E. J. Jensen, J. A. Bargen and A. H. Baggenstoss.—p. 75.
Reaction of Human Colon to Naturally Occurring and Experimentally Induced Emotional States; Observations Through a Transverse Colostomy on Patient with Ulcerative Colitis. J. Wener and A. Polonsky.—p. 84.
Alterations in Colonic Function in Man Under Stress: IV. Hypomotility of the Sigmoid Colon, and Its Relationship to the Mechanism of Functional Diarrhea. T. P. Almy, F. K. Abbot and L. E. Hinkle Jr.—p. 95.
Studies on the Mechanism of Alimentary Lysozyme Production. Absence of Parasympathetic and Histamine Control. J. F. Prudden and N. Lane.—p. 104.
Some Fallacies in the Clinical Measurement of Gastric Acidity with Special Reference to the Histamine Test. H. Shay, S. A. Komarov and J. E. Berk.—p. 110.
Observations on the Gastric Secretion in Two Duodenal Ulcer Patients During the Prolonged Injections of an Enterogastrone Concentrate. H. L. Segal, E. E. Ellis and J. S. Watson.—p. 118.
Production of Acute Pancreatitis in Dogs by Administration of Mecholyl. J. Wener, M. A. Simon and H. E. Hoff.—p. 125.
Color of Blood-Containing Feces Following the Instillation of Citrated Blood at Various Levels of the Small Intestine. J. H. Hilsman.—p. 131.

15:185-244 (May [Part II]) 1950

Neoplasms of the Stomach Other than Carcinoma. H. L. Thompson and J. M. Oyster.—p. 185.

Normal Intestinal Bacteria in Ulcerative Colitis.—Seneca and Henderson made a thorough search for bacteria and protozoa in 15 patients with ulcerative colitis, giving especial attention to the normal intestinal bacteria. They determined the total number of bacteria, as well as the coliform organisms in the stools of these patients. Streptococcus was isolated in one of the 15 patients, who gave a history of abdominal pain, blood and mucus in the stools and loss of weight and energy of seven years' duration. Proctoscopic and roentgen examinations revealed no abnormalities. In two patients the diagnosis

was mucous colitis. Proctosigmoidoscopic examination showed chronic ulcerations in the remaining 12 patients, while in only nine was there clearcut roentgenologic evidence of chronic ulcerative colitis. The mean total bacterial count was 14,000 billion per gram of wet feces. The mean coliform bacterial count was 5,970 billion per gram of wet feces. The total intestinal bacterial count was increased eighty-five fold, while the coliform bacterial count was increased fifty fold over normal. If one assumes that specifically injurious enzymes, such as lysozyme, which denudes the epithelium of its mucous barrier, plays a part in the etiology, the pathogenesis of ulcerative colitis may be envisaged as follows: First, there is decided increase in the total number of intestinal bacteria. Second, through enzymatic activity of these bacteria there is brought about initial damage to the mucosa. Third, there is extensive destruction of the tissue by proteolytic bacterial enzymes, affording an opportunity for invasion and infection of the mucous membrane.

Hepatic Function in Portal Cirrhosis.—Ricketts and his associates feel that more data are needed concerning the function of the liver in relation to the severity of cirrhosis and with respect to the change in hepatic function after medical management. They describe studies on 20 healthy subjects and on 50 patients with portal cirrhosis, including 14 patients without symptoms referable to the liver, in whom the cirrhosis was discovered during routine examination; 23 with moderately severe clinical manifestations, and 13 severely jaundiced patients, all of whom were severely ill. The diagnosis of portal cirrhosis was established by microscopic examination of specimens obtained by needle biopsy in 38 and during peritoneoscopy in three; the clinical and laboratory features in the remaining nine cases were unequivocal. The tests included determination of serum bilirubin, serum cholesterol and cholesterol esters, serum alkaline phosphatase, plasma proteins, albumin and globulin and prothrombin time, sulfobromophthalein sodium excretion, intravenous hippuric acid, thymol turbidity and cholesterol flocculation tests and quantitative determination of urobilinogen output in 24-hour collections in urine and feces. The authors concluded that there is a direct relation between the severity of clinical symptoms of hepatic failure and the alteration of hepatic function. Hepatic function, as measured by conventional tests, may be normal in portal cirrhosis. Pronounced improvement of hepatic function in portal cirrhosis was observed after medical treatment.

Homologous Serum Hepatitis.—Steele reports observations on 26 cases of homologous serum hepatitis observed in a general hospital. Six of the patients had received only one unit of 250 cc. of plasma; six had received both plasma and blood; 11 patients had received only transfusions of whole blood; one patient had received yellow fever vaccine; another patient received 10 cc. of whole blood for induction of therapeutic malaria, and one patient was treated with blood and an antihemophiliac extract of human serum. This latter preparation was later shown to have caused hepatitis in others. The cases occurred during a period when 350 to 400 transfusions were given every month. The treatment in the 26 cases of homologous serum jaundice was the same as that used in 63 cases of acute epidemic hepatitis. It consisted in dietetic treatment (high protein, high carbohydrate and low fat), vitamins and, when indicated, choline chloride or methionine. Of the 63 patients with epidemic hepatitis three died (4.8 per cent). Of 26 patients with homologous serum hepatitis, nine died, a death rate of 34 per cent. This shows that homologous serum hepatitis is a very serious disease. The most satisfactory explanation for the higher death rate in homologous serum hepatitis seems to be that the general condition was much more unfavorable in those who died at the time the virus was introduced than was the case in those who survived. Only one of the nine patients who died of homologous serum hepatitis was considered in good health at the onset of the disease. The administration of gamma globulin for prevention of serum jaundice does not seem effective. Ultraviolet irradiation is effective but too expensive. Nitrogen mustard sterilization of blood and plasma appears thus far to be a relatively inexpensive, harmless and effective method for prevention of this disease.

Journal of Lab. and Clinical Medicine, St. Louis

35:829-1012 (June) 1950

Observations on Use of Para-Aminohippuric Acid (PAH) in Kidney Function Tests. N. Kalant.—p. 829.
Determination of Sodium Thiosulfate and Para-Aminohippuric Acid in Renal Clearance Tests. N. Kalant and C. S. McArthur.—p. 836.
*Administration of Potassium to Patients with Prolonged Vomiting and Diabetic Acidosis. C. S. Nadler, S. Bellet, P. C. Gazes and others.—p. 842.
Effect of Citrate Salts and Other Chemical Factors on Distribution and Excretion of Berryllium. J. Schubert and M. R. White.—p. 854.
Hypouricemia with Evidence for Tubular Elimination of Uric Acid. E. Praetorius and J. E. Kirk.—p. 865.
Variations in Serum Polysaccharide and Sedimentation Rate in Clinic Patients. R. J. Cohen and B. Byham.—p. 869.
Comparison of in Vitro Activity of Nisulfazole with That of Other Sulfonamides. M. C. Colglazier.—p. 875.
Studies on Lymphocytes from Persons Treated with Radioactive Iodine. W. E. Watts and D. R. Mathieson.—p. 885.
Gelfoam and Thrombin in Gastroduodenal Bleeding: Experimental Study. M. O. Cantor and R. P. Reynolds.—p. 890.
*Long-Term Evaluation of Folic Acid in Treatment of Pernicious Anemia. S. O. Schwartz, S. R. Kaplan and B. E. Armstrong.—p. 894.
Effect of Adrenocorticotropic Hormone upon Uropepsin Excretion. H. M. Spiro, R. W. Reifenstein and S. J. Gray.—p. 899.
Tolerance to Action of Endotoxins of Enteric Bacilli in Patients Convalescent from Typhoid and Paratyphoid Fevers. F. A. Neva and H. R. Morgan.—p. 911.
Splanchnic Blood Flow in Man by Bromsulfalein Method: Relation of Peripheral Plasma Bromsulfalein Level to Calculated Flow. S. Sherlock, A. G. Bearn, B. H. Billing and J. C. S. Paterson.—p. 923.
Effect of Rutin on Capillary Fragility and Permeability. C. T. Frerichs, I. G. Tillotson and J. M. Hayman Jr.—p. 933.
Studies on Beta-Glucuronidase Activity in Pregnant Albino Rats. R. M. Bernard and L. D. Odell.—p. 940.
Ventilation Measurements in Pulmonary Emphysema Treated with Pneumoperitoneum. E. A. Gaensler and M. G. Carter.—p. 945.
Blood Ergothioneine Levels in Diabetes Mellitus. R. Fraser.—p. 960.
Fat Emulsions for Oral Nutrition: I. Absorption of Fat in Rat. M. Shoshkes, R. P. Geyer and F. J. Stare.—p. 968.

Potassium for Patients with Prolonged Vomiting and Diabetic Acidosis.—Nadler and his associates administered potassium to 49 patients with hypopotassemia; 25 were undergoing treatment for diabetic acidosis, and 24 had intestinal obstruction associated with prolonged vomiting. Hypopotassemia was suspected after prolonged vomiting due to intestinal obstruction, and the potassium deficit was further increased in many of these patients who received parenteral fluids in which potassium was omitted. Three of the diabetic patients showed skeletal muscle flaccidity, lowered blood pressure, bounding pulse and a loud systolic precordial murmur. The other patients showed only minor degrees of these manifestations, the most prominent of which were skeletal muscle weakness and/or a decrease in the blood pressure, particularly the diastolic component. The determination of the serum potassium was made by the flame photometer. Although the chemical method is of value in the initial diagnosis of a deficit in this cation, it was not always practical for repeated determinations. Therefore, serial electrocardiograms were taken. Prolongation of the Q-T interval accompanied with widening of the T wave and lowering or inversion of the T waves (CR_3) were used as a crude estimate of the serum potassium concentration. When administered orally, both potassium citrate and potassium chloride were given in amounts ranging from 2 to 18 Gm. For intravenous use, 100 to 1,000 cc. of 1.14 per cent potassium chloride were administered. For administration of this drug by hypodermoclysis, 500 cc. of a 1.14 per cent solution of potassium chloride were mixed with equal quantities of sodium chloride. The administration of potassium is contraindicated in patients with poorly functioning kidneys, but the authors believe that, if the azotemia is prerenal and the serum potassium concentration is decreased, cautious administration of potassium may help relieve the shocklike state and improve renal function. The serum potassium concentration is the important factor in determining the optimum time to administer potassium and the rate at which this cation may be administered. Potassium should not be administered unless the serum concentration is decreased. In order to avoid cardiotoxic effects, one must not give an amount exceeding the clearance of this cation from the blood into the intracellular space and urine.

Long Term Evaluation of Folic Acid in Pernicious Anemia.—Schwartz and his collaborators summarize observations on 98 patients with pernicious anemia who were treated with folic acid (pteroylglutamic acid) for three and a half years.

Folic acid was administered orally in a daily dose of 5 mg. The patients were seen at four-week intervals for interviews and neurologic and hematologic examination. The criteria for neurologic relapse were the objective findings of posterior and/or lateral column dysfunction, namely, hyperactive deep reflexes, positive Romberg sign and impairment of vibratory sensation. The development of macrocytosis and a progressively falling erythrocyte level with a rising color index were considered evidence of hematologic relapse. Twenty-three patients relapsed hematologically, half in less and half in more than two years. All hematologic relapses were reversible. Twenty-three patients relapsed neurologically, all in less than two years. Not all relapses were reversible. Nine patients had combined neurologic and hematologic relapses. Twelve patients have been satisfactorily treated with folic acid throughout the study period. The authors conclude that folic acid is an unsatisfactory therapeutic agent for the maintenance of patients with pernicious anemia.

Journal of Thoracic Surgery, St. Louis

19:821-986 (June) 1950. **Partial Index**

Bronchospirometry in Lateral Decubitus Position. E. Rothstein, F. B. Landis and B. G. Narodick.—p. 821.
Resection of Intrathoracic "Hibernoma." C. F. Kittle, J. O. Boley and P. W. Schafer.—p. 830.
*Late Results in Four Hundred and Twenty Tuberculous Patients Subjected to Thoracoplasty. F. Hagn-Meincke.—p. 837.
Evaluation of Apicolysis in Thoracoplasty. F. Hagn-Meincke.—p. 853.
Intrapericardial Anatomy in Relation to Pneumonectomy for Pulmonary Carcinoma. J. E. Healey Jr. and J. H. Gibbon Jr.—p. 864.
Thoracoplasty and Streptomycin in Treatment of Tuberculous Empyema. M. R. Connolly and J. H. Forsee.—p. 877.
Observations on Thoracoplasty During Pregnancy. J. P. McIntyre. —p. 882.
*Streptomycin Plus Alkalinization of Pleural Cavity in Treatment of Tuberculous Empyema. E. Staines and C. Cárdenas.—p. 891.
Transscapular Thoracoplasty. A. J. Coello.—p. 900.
Experiences with Surgical Resection of Human Carina, Tracheal Wall, and Contralateral Bronchial Wall in Cases of Right Total Pneumonectomy. O. A. Abbott.—p. 906.
Phrenic Nerve Paralysis: Special Consideration of Accessory Phrenic Nerve. W. O. Kelley.—p. 923.
Electrophrenic Respiration: IV. Effectiveness of Contralateral Ventilation During Activity of One Phrenic Nerve. S. J. Sarnoff, E. A. Gaensler and J. V. Maloney Jr.—p. 929.
Pulmonary Function Studies Before and After Extrapleural Pneumonolysis with Plombage. S. H. Dressler, G. J. Bronfin and J. B. Grow. —p. 938.
Familial Incidence of Cervical Ribs. R. K. Purves and P. H. Wedin. —p. 952.
Anomalous Arteries to Lung Associated with Congenital Pulmonary Abnormality. A. Bruwer, O. T. Clagett and J. R. McDonald.—p. 957.

Late Results in Thoracoplasty.—Hagn-Meincke reports on 420 patients with pulmonary tuberculosis subjected to paravertebral thoracoplasty, including extensive resection of the upper ribs. Semb apicolysis thoracoplasty was carried out in 261 of the 420 patients. The majority of the patients were between the ages of 20 and 40 years. Extension of the tuberculous process was unilateral and slightly bilateral in 222 patients, moderately bilateral in 162 patients and extensively bilateral in 26; 10 patients had bilateral cavities. Three hundred and sixty-five patients (87 per cent) had unilateral cavities, whereas a cavernous process could not be demonstrated with certainty in 55 patients (13 per cent). One hundred and twenty-eight patients (30 per cent) with chronic fibrocavernous process and slight contralateral involvement were in good general condition ("good chronic"). All the patients were followed up for at least three years after operation. Permanent results obtained in the 420 patients were as follows: 193 were healthy, 95 were ill and 132 died, 36 of the latter within two months of the operation, the operative mortality being 8.6 per cent. Permanent results obtained in the 128 "good chronic" patients were as follows: 75 were healthy, 32 were ill and 21 died (four died within two months of operation). The operation mortality was 3.1 per cent. Fairly good results of thoracoplastic treatment of chronic cavernous phthisis were demonstrated by a comparison with patients who were treated conservatively. Excellent results were obtained with all forms of thoracoplasty in the "good chronic" patients, more than 60 per cent of whom recovered, as against 20 to 25 per cent with conservative treatment. Thoracoplasty must be considered preferable to conservative treatment in patients of this type. Extension of thoracoplasty indications to patients with poorer general condition and major contralateral process showed that the results obtained even in cases of inactive involvement of the contralateral lung, up to one third of the lung area, are far better than corresponding results of conservative treatment. Good results were obtained even for cavities with a diameter up to 6 cm. Patients with slight or moderate bilateral extension of the tuberculous process showed a recovery percentage of about 50 and an operative mortality of 6 or 7 per cent, which is far better than with conservative treatment. A considerable extension of thoracoplasty indications beyond the "good chronics" is fully justified. Thoracoplasty as a rule should not be performed in patients with bilateral cavities.

Streptomycin Combined with Alkalinization in Tuberculous Empyema.—Staines and Cárdenas report on 35 patients with tuberculous empyema complicating collapse therapy. Tubercle bacilli were demonstrated by direct examination in every instance. Bronchial fistulas were revealed in 15 patients. Evacuation of the pus was done by pleural tapping followed by pleural lavage with isotonic sodium chloride solution. Streptomycin, 0.5 to 1 Gm. dissolved in 15 cc. of a 25 per cent sodium citrate solution, was injected into the pleural cavity. Complete cure with sterilization of the cavity and total disappearance of fluid was accomplished in 23 patients. Ten patients were improved, with a small amount of serous fluid negative for acid-fast bacilli still present at the end of the treatment in eight and with completely dry and negative cavities but not closed bronchial fistulas in two. Treatment failed in the remaining two patients, with purulent fluid but negative for acid-fast bacilli in one and with some serous fluid positive for acid-fast bacilli in the other. Alkalinization of the pleural cavity by instillation of 25 per cent sodium citrate solution must be done to create a favorable medium for the streptomycin, whose action may be otherwise inhibited by the acid reaction of the tuberculous empyema. Pleural fluid with p_H above 8.1 inhibits growth of Koch bacilli. The highly satisfactory results obtained by the combined administration of sodium citrate solution and streptomycin are in sharp contrast with those of streptomycin therapy of tuberculous empyema obtained by a group of Veterans Administration hospitals which reported likewise on 35 patients, in 22 of whom treatment was considered to have failed. (*J. A. M. A.* **138**:584 [Oct. 23] 1948). The authors' technic gave better results than any other procedure employed up to now for treatment of tuberculous empyema.

Journal of Urology, Baltimore

63:947-1138 (June) 1950. **Partial Index**

*Parathyroid Adenoma and Renal Calculi. H. L. Kretschmer.—p. 947.
Renal and Ureteral Responses to Obstruction. J. F. McCahey.—p. 976.
Pararenal Teratoma: Case Report. W. J. Baker and A. B. Ragins. —p. 982.
Simultaneous Bilateral Operations on Kidneys. T. E. Gibson.—p. 991.
Marked Renal Hematuria with Negative X-Ray Findings. J. A. Taylor. —p. 997.
Instrumental Visualization of Renal Pelvis at Operation as Aid to Diagnosis: Presentation of New Instrument. W. F. Leadbetter.—p. 1006.
Bladder in Fracture of Bony Pelvis: Significance of "Tear Drop Bladder" as Shown by Cystogram. G. C. Prather and T. F. Kaiser.—p. 1019.
*Treatment of Urinary Retention in Women by Transurethral Resection. J. L. Emmett, S. P. R. Hutchins and J. R. McDonald.—p. 1031.
Consequences of Surgical Relief of Ureterovesical Obstruction. L. M. Orr.—p. 1043.
Transmidline Uretero-Ureterostomy Necessitated by Solitary Damaged Kidney. E. Davis and L. W. Lee.—p. 1053.
Spontaneous Rupture of Tubo-Ovarian Abscess into Urinary Bladder. B. W. Young and O. J. Bacci.—p. 1057.
Diverticula of Female Urethra. L. R. Wharton and W. Kearns.—p. 1063.
Development of Cancer of Prostate After Subtotal Prostatectomy. G. G. Smith and L. M. Woodruff.—p. 1077.
*Cytologic Detection of Prostatic Carcinoma: Its Clinical Application. E. F. Hock, F. W. Wood and A. A. Kosinski.—p. 1081.
Concomitant Bilateral Malignant Testicular Tumors. R. S. Hotchkiss and R. B. Laury.—p. 1086.
Treatment of Male Infertility: Evaluation of Medicinal Therapy. O. S. Culp and D. E. Beynon.—p. 1093.

Parathyroid Adenoma and Renal Calculi.—Kretschmer discusses the relationship between lesions of the parathyroid glands and renal calculi and reports 4 cases in which hyperparathyroidism and renal calculi were associated. A woman aged 35 died probably as the result of a hyperparathyroid crisis. She had had a parathyroid adenoma of at least seven years' duration, as evidenced by recurrent episodes of renal calculi. Another patient had parathyroid disease at the time of her

first nephrectomy for stone. She subsequently underwent a pyelotomy for removal of a stone. An adenoma of the thyroid was removed at a later date. The third patient had undergone removal of a urinary stone two years earlier. Later, after a cholecystectomy for cholelithiasis, she passed more calculi; some time later renal lithiasis due to parathyroid adenoma was diagnosed. She underwent ureterolithotomy, and several months later a parathyroid adenoma was removed. The fourth patient was a man aged 35 who had undergone right nephrectomy for renal calculi, then a left ureterolithotomy and later pyelotomy for a stone impacted in the ureteropelvic junction. The patient died as the result of a peritonitis due to a perforated ulcer. Necropsy revealed, in addition to multiple duodenal ulcers, adenomas of the parathyroids, adenocarcinoma of insular tissue and multiple adenomas of the adrenal cortices. Kretschmer feels that the urologist should look for parathyroid disease in all cases of renal and ureteral stone, especially in recurrent cases.

Treatment of Urinary Retention in Women by Transurethral Resection.—Emmett and his associates point out that obstruction of the vesical neck in women is commoner than has been realized, especially in women past middle life. The diagnosis is easily made in the presence of residual urine and obstructive symptoms, but minor degrees of obstruction with little or no residual urine may go unrecognized. The authors studied the records of 100 women on whom transurethral resection of the vesical neck was performed at the Mayo Clinic. Transurethral resection was done in 24 for neurogenic vesical dysfunction. In the remaining 76 cases frequency of urination and dysuria headed the list of symptoms. The urologic consultants at the clinic usually advised transurethral resection of the vesical neck only when considerable amounts of residual urine were present. Most of the patients in this series carried substantial amounts of residual urine or had recurring episodes of complete retention. There seems to be no one predominant causative factor, but surgical operations have been incriminated occasionally. Sixteen of the 76 patients had had previous surgical operations. The 60 patients who had not been operated on previously were studied for possible predisposing factors, but the search proved relatively unproductive. Among the factors of possible importance were (1) old gonorrheal infection with subsequent stricture and contracture of the vesical neck in 1 case, carcinoma of the uterus or uterine cervix in 3 cases, carcinoma of the urethra and vesical neck in 2 cases, interstitial cystitis in 1 case and cystocele in 1 case. In 1 case the obstruction developed during the patient's fifth pregnancy. The authors studied microscopically the tissue removed from the vesical neck in the 76 cases analyzed here and in the 24 cord bladders not included in this analysis. They found that glandular hyperplasia is not an important factor, and that most of the glands in such conditions are the subtrigonal glands of Albarran, which should not be confused with prostatic glands. Transurethral resection of the neck of the bladder is the treatment of choice. The surgeon learns by experience how wide the resection should be. Care must be taken not to carry the resection too far proximally, in order to avoid traumatization of the ureteral orfices. If the patient does not void satisfactorily within a week after operation, the vesical neck should be reexamined and further resection done if feasible. The amount of tissue to be removed varies. In some cases small pieces, weighing less than 1 Gm., are sufficient, whereas in others several grams must be removed. Good results were obtained in 46 cases. The condition was considered improved in 16 other cases and was unimproved in 14.

Cytologic Detection of Prostatic Carcinoma.—Hock and his co-workers performed routine cytologic studies on prostatic secretion of patients 50 years of age and over in an attempt to arrive at an earlier diagnosis of carcinoma of the prostate. They made 175 Papanicolaou stains of prostatic secretions from 150 patients. There were 13 patients in this group with carcinoma of the prostate. Of these, the diagnosis was proved by histologic sections in 9 and was clinically certain in 4. Tumor cells were found in secretions of 4 of the 13 patients (30.7 per cent). Suspicious cells were found in 4 other patients. It is possible that with increased experience in the interpretation of the preparations it would be possible to classify these suspicious cells as malignant. This would give a 61.4 per cent correlation of positive smears to prostatic carcinoma. The authors consider the presence of malignant cells in two carefully prepared smears sufficient evidence to warrant radical resection even in the presence of an otherwise normal gland. Three cases have been cited to show that it was the positive Papanicolaou stain which influenced the surgeon toward radical resection. This represents a total of 2 per cent of patients in whom prostatic carcinoma was detected on the basis of this routine procedure.

Kansas Medical Society Journal, Topeka

51:273-328 (June) 1950

Clinical Evaluation of Adrenal Cortical Function. R. E. Bolinger. —p. 273.
Discussion of Prognosis and Etiology of Wolff-Parkinson-White Syndrome. P. J. Burdon.—p. 279.
Primary Carcinoma of Intrahepatic Bile Ducts. R. F. Carter and W. A. Smiley Jr.—p. 281.
Massive Gastro-Intestinal Hemorrhage in Pregnancy with Report of Case. R. H. Maxwell and J. G. Kendrick.—p. 283.

Kentucky Medical Journal, Bowling Green

48:201-246 (May) 1950

Medical Management of Peptic Ulcer. C. B. Billington.—p. 201.
Ear, Nose and Throat Problems. E. C. Yates.—p. 205.
Exophthalmos in Thyroid Disease. C. D. Townes.—p. 208.
The Care of Premature Infants. J. G. Van Dermark.—p. 212.
Ultimate Prognosis of Acute Myocardial Infarction: Study of 484 Patients Who Survived for More Than Two Months. M. M. Weiss and W. R. Gray.—p. 216.

48:247-302 (June) 1950

Freedom of American Medicine. E. E. Irons.—p. 247.
Medical Thyroidectomy in General Practice. G. J. Sweeney.—p. 252.
Our Medical School. J. M. Kinsman.—p. 256.
Chronic Occlusive Vascular Disease. A. B. Ortner.—p. 263.
Radiology in Rural Practice. J. C. Bell.—p. 270.
Medical Urology. R. Lich Jr.—p. 275.

Medical Woman's Journal, Cincinnati

57:11-24 (June) 1950

*Handling of Lepers in Accordance with the International Classification. E. Oteo de Hoogh.—p. 11.
Unique Role of Women as Therapists in Psychiatry. B. M. Meyer. —p. 18.
Unusual Case of Hydrocephalus with Some Comments on Delivery. C. D. Bradley.—p. 24.

Handling of Lepers in Accordance with Classification.—According to Oteo de Hoogh several classifications of leprosy have been adopted since the middle of the last century. The Pan American Classification has been generally accepted. This classification depends primarily on the recognition of the special histopathology, malignancy or nonmalignancy, immunity of the patient and course of the disease. Thus the Pan American Classification recognizes three main groups: lepromatous, tuberculoid and undetermined or mixed. One of the first steps in treatment is to acquaint the patient with such knowledge as is necessary to secure his cooperation and to aid him in adjusting to several years of treatment. He should be taught to live as near a normal life as is possible. The word "leprosy" is better never used. Hansen's disease sounds less ominous. The diagnosis should always be guarded. A general atmosphere of optimism is especially beneficial in cases where the progress is chronic. Much delicacy and discretion are required. Treatment should extend over a period of one to four years. Besides the use of glucosulfone (promin®) sodium and sulfoxone (diasone®) sodium, general hygienic measures are extremely important. The author pleads for the elimination of prejudices, ignorance and cruelty toward the person affiliated with Hansen's disease. It is imperative to convince the patient and the public of a favorable prognosis in the disease.

Nebraska State Medical Journal, Lincoln

35:137-164 (May) 1950

Clinical Importance of Congenital Anomalies of Urinary Tract. E. Burns. —p. 140.
Carcinoma of Cervix Uteri: Evaluation of Radiation Therapy. H. B. Hunt and R. M. Coleman.—p. 145.
Treatment of Bacterial Endocarditis. J. A. Pleiss.—p. 149.
Perennial Nasal Allergy. E. C. Montgomery.—p. 152.

New England Journal of Medicine, Boston

242:887-922 (June 8) 1950

*Follow-Up Study of Pertussis in Infancy. R. K. Byers and N. D. Rizzo.—p. 887.
Amyloid Disease with Hypertension: Report of Case and Review of Literature. S. E. Leard and W. E. Jaques.—p. 891.
Carcinoma of Cervix: Report of 200 Cases Treated with Radium and X-Rays. G. C. Wilkins.—p. 895.
Dilantin Sensitivity: Report of Case of Hepatitis with Jaundice, Pyrexia and Exfoliative Dermatitis. B. H. Chaiken, B. I. Goldberg and J. P. Segal.—p. 897.
Recognition, Treatment and Control of Poliomyelitis. E. Vogel.—p. 899.

Pertussis in Infancy.—Byers and Rizzo report on 35 children who were admitted to the hospital with whooping cough that began between the ages of three weeks and 23 months. The patients were followed up for many years. Twenty-six of 35 children recovered apparently without residua; two of these had encephalopathy on admission, and four more had cerebral symptoms while in the hospital. The remaining nine of the 35 children had more prolonged intellectual and emotional difficulties, which in six seemed sufficiently severe and persistent to compromise permanently their competitive status. Three of these six children had obvious encephalopathy on admission to the hospital and in another this complication developed in the hospital. No suspicion of cerebral involvement was noted in the hospital in the remaining two. Three children, one of whom had mild cerebral symptoms and a high spinal-fluid protein in the hospital, appeared to have suffered temporary developmental damage, from which recovery occurred after a period of years. Many of the children studied were exposed to known cases of whooping cough and could probably have been protected by the use of hyperimmune serum. The risks of its use in infancy may be outweighed by those of the disease itself.

Pediatrics, Springfield, Ill.

5:909-1060 (June) 1950

*Observations Regarding Artificially Induced Subcutaneous Nodules in Rheumatic Fever Patients. B. F. Massell, W. B. Coen and T. D. Jones.—p. 909.
*Carcinoma of Cervix in First Year of Life: Report of Two Cases. G. P. Heckel.—p. 924.
Rocky Mountain Spotted Fever Without Rash: Report of Case Treated with Chloramphenicol. R. O. Warthen and W. F. Burdick.—p. 930.
Clinical Note on Stuttering and Cluttering in Young Children. K. de Hirsch and W. S. Langford.—p. 934.
Secretin Tests with Bilumen Gastroduodenal Drainage in Infants and Children. G. E. Gibbs.—p. 941.
Electric Systole (QT Interval) in Acute Rheumatic Pericarditis in Children. L. M. Taran and D. Ordorico.—p. 947.
Clinical Recovery Following Prolonged Anuria in Infant Two Months of Age: Report of Case of Potassium Bromate Intoxication. S. A. Warren and W. V. Gross Jr.—p. 954.
Degenerative Changes in Young Diabetic Patients in Relationship to Level of Control. R. L. Jackson, R. C. Hardin, G. L. Walker and others.—p. 959.
Female Pseudohermaphroditism with Hypoadrenia. T. C. Panos.—p. 972.
Natural History and Pathogenesis of Miliary and Meningeal Tuberculosis in Children: Analysis of 163 Cases. T. L. Perry.—p. 988.
Idiopathic Hypoparathyroidism with Papilledema in Boy Six Years of Age: Report of Case Associated with Moniliasis and Celiac Syndrome and Brief Review of Literature. C. Collins-Williams.—p. 998.
*Treatment of Erythroblastosis: Analysis of Community Efforts Using Substitution Transfusion. C. J. Molony.—p. 1008.

Artificially Induced Subcutaneous Nodules in Rheumatic Fever Patients.—Massell and co-workers induced artificially subcutaneous nodules indistinguishable from spontaneously occurring nodules in rheumatic patients by the subcutaneous injection of blood. The frequency, size and duration of the nodules correlated closely with the severity and duration of the rheumatic process. Only infrequently could nodules be induced in control persons suffering from conditions unrelated to rheumatic fever. Citrated blood obtained from patients with highly active rheumatic fever seemed to be more effective in inducing nodules in quiescent and mildly active rheumatic patients than did the patient's own blood. The active rheumatic blood was not more effective than blood obtained from healthy young adults. The daily injection of convalescent serum into the site of the nodule test did not interfere with the induction of nodules. Sodium chloride solution, as well as blood, effectively induced nodules in certain patients, provided it was injected subcutaneously with the standard traumatizing technic into the anesthetized region of the olecranon process of one elbow. The successful induction of nodules over the anterior aspect of the knee, although not occurring with as high frequency as in the region of the elbow, indicated that there is nothing peculiar to the subcutaneous tissues overlying the olecranon process. The authors conclude that the development of nodules results from injury to the subcutaneous fibrous tissue, the reactivity of which is altered by the rheumatic process, and that the hypothesis of a nodule-stimulating substance present in the blood of active rheumatic patients is untenable. Nodules were induced in some rheumatic patients by the subcutaneous injection of hyaluronidase. These observations suggest that enzymes may play a role in the mechanism of nodule formation. It is also possible that hyaluronidase acts in a nonspecific way and sets off the nodule reaction merely by injuring the subcutaneous fibrous tissue.

Carcinoma of Cervix in First Year of Life.—Heckel reports two cases of adenocarcinoma of the cervix in infant girls aged seven and 11 months. There is probably but one previous report of occurrence in a patient under 1 year of age. The first of the author's patients died of the disease on the day of admission to the hospital, having had vaginal bleeding for about one month. The second patient was living normally 21 months after a total hysterectomy. Vaginal bleeding had begun eight days before the surgical intervention.

Substitution Transfusion in Erythroblastosis.—Molony treated 45 newborn infants with erythroblastosis by substitution transfusion. At first most of the substitution transfusions were done on the second to fourth days, but now they are being done in the first 18 hours of life or not at all. Donor blood was Rh negative in all cases and usually was type specific. At first, about 200 cc. of blood was replaced and an additional 50 cc. given, but now close to 500 cc. is replaced and an additional 50 cc. given. Results of treatment are compared with those in 35 infants with erythroblastosis who were not given substitution transfusions. Thirteen of the 45 and five of the 35 infants died. Mortality figures thus favored the use of the conservative, multiple, simple transfusion method of treatment. Even in groups with conditions of comparable severity, substitution transfusion resulted in a higher mortality. Evidence is presented that errors in technic may have had an appreciable effect on the poor results from substitution transfusion. These errors include the use of too little blood, delayed operation, use of the umbilical vein for transfusion, improper injection of calcium and failure to protect the infant against exposure and dehydration. Coomb's antiglobulin test was observed to be reliable, easy to perform and extremely sensitive. There was a good correlation between strength of the reaction and the severity of the condition. Substitution transfusion was not performed unless the result was positive. Infants who received substitution transfusion for severe erythroblastosis were discharged from the hospital a week earlier than infants with severe disease who did not receive this treatment. Substitution transfusion also resulted in earlier stabilization of blood hemoglobin levels above 12 Gm. A technic for this treatment is presented in detail with suggestions for avoidance of the errors made in the authors' cases.

Pennsylvania Medical Journal, Harrisburg

53:449-576 (May) 1950

Rehabilitation. D. A. Covalt.—p. 465.
Diphtheria Immunity in School Children (Don't Neglect the Schick Test). S. M. Hindman and P. B. Kreitz.—p. 468.
Management of Premature Labor. W. E. Starz.—p. 471.
Medical Rehabilitation of the Physically Handicapped. M. B. Ferderber.—p. 473.
Value of Psychosurgery in Mental Disease. F. C. Grant.—p. 478.
Treatment of Hypertension. W. A. Jeffers, M. A. Lindauer, J. H. Hafkenschiel and others.—p. 483.
Tendon Injuries. C. A. Phillips Jr.—p. 487.
Chronic Urethro-Trigonitis in the Female. H. E. Brown.—p. 489.
Present Ideas Concerning Body Fluids and Chief Electrolytes. T. S. Danowski.—p. 494.
Carcinoma of Breast. D. Guthrie and D. M. Clough.—p. 497.
Pituitary Disorders in Childhood. B. J. Wood.—p. 501.
Roentgenologic Aspects of Anthracosilicosis. W. J. Corcoran.—p. 505.

Plastic and Reconstructive Surgery, Baltimore

5:373-470 (May) 1950. **Partial Index**

Surgical Treatment of Hypospadias, Especially Scrotal and Perineal. D. M. Davis.—p. 373.
*Construction of Grafted Ileostomy or Colostomy Stoma Using Abdominal Wall Flaps. K. L. Pickrell, N. J. Wilde, T. R. Broadbent and others. —p. 384.
Small Triangular Flap Operation for Primary Repair of Single Cleft Lips. J. B. Brown and F. McDowell.—p. 392.
Plastic Surgery of Eyelids. F. A. Figi.—p. 403.
Case of Reconstruction of Maxilla Following Resection for Carcinoma of Antrum. J. M. Converse and B. Smith.—p. 426.
Formation of Helix with Postauricular Flap. M. L. Lewin.—p. 432.

Abdominal Wall Flaps for Grafting Ileostomy or Colostomy Stoma.—Pickrell and his associates point out that Dragstedt, Dack and Kirsner in 1941 recognized the possibilities of creating a spigot out of the exteriorized portion of ileum by applying a thin split skin graft to the serosal surface of the protruding ileum. This procedure of skin grafting the exposed intestinal segment represented a tremendous advance. In 1945 Dennis described an operation to construct a skin-buttressed nubbin or collar on which to hang a Koenig-Rutzen bag. The authors describe the accepted procedure for the construction for a skin-grafted ileostomy stoma. They mention the complications that may result from this method, which induced them to design abdominal wall flaps for heavy, full thickness skin and subcutaneous tissue covering for an exteriorized segment of ileum or colon. Details of the operative procedures for elevation and transfer of the abdominal wall flaps are illustrated with photographs. Flap grafting the exteriorized segment may be completed in a single operation. The spigot should extend a minimum of two inches (5 cm.) beyond the normal contour of the abdomen. The authors cite the following advantages of the flap grafted stomas: There is essentially no shrinkage and contracture like that which may occur with the use of a split skin graft. The surface of the exteriorized flap has better texture and quality and will withstand trauma. Areas of erosion are thereby prevented which might result in the formation of fistulas or "chordee" deformity or distortion. The occurrence of stenosis of the mucocutaneous junction of graft to bowel is minimized, thereby preventing distension and dilatation of the segment of intestine proximal to the stoma. Since the collar or neck of the stoma is circular in outline in both the free grafted stoma as well as with the use of flaps, progressive circular contracture, which may result in prolapse of the mucosa, is minimized because the flaps can expand and contract—thus acting as a sphincter. Rotation of the stoma is prevented because the bases of the flaps are fixed. Mobility of the spigot is unrestricted in all positions.

Psychoanalytic Quarterly, Albany, N. Y.

19:1-88 (Jan.) 1950

Climacterium: A Developmental Phase. T. Benedek.—p. 1.
Psychopathology of Climacteric Depression. L. Fessler.—p. 28.
Concept of Normality. N. Reider.—p. 43.
Trial Analysis in Therapeutic Process. R. Eckstein.—p. 52.
Enjoyment of Listening to Music. H. Kohut and S. Levarie.—p. 64.
*Psychoanalytic Aspects of Bureaucracy. O. Sperling.—p. 88.

Psychoanalytic Aspects of Bureaucracy.—Sperling cites the charges most frequently leveled against bureaucracy. Attempts have been made to explain these defects on the basis of Wundt's heterogeny of ends, which is that the discrepancy between the ethical ideals of bureaucracy and its actual status is explained as the result of the displacement of goals, whereby an instrumental value becomes a terminal value. In the psychoanalysis of individual bureaucrats, however, the author did not find that the displacement of goals is the driving motive. Pedantry is not the logical result of precision; the sense of limitation of one's authority does not in itself degenerate into avoidance of responsibility, and specialization does not necessarily turn into "trained incapacity." The author presents several illustrative case histories. He believes that complaints about bureaucracy are an indication of failure in leadership on the part of those given positions of authority. Some of the individual traits which make the bureaucrat unendurable are compulsive character (or neurosis), lack of empathy (schizoid fanaticism), sadistic tendencies (psychopathy) and identification with the aggressor (bureaucrat). Some of the hostility toward bureaucracy stems from a prejudice of the people, based on the "stepfather" role of the bureaucrat, and the complaints about bureaucracy are an outlet for the discontent with the restrictions of civilization.

Public Health Reports, Washington, D. C.

65:771-794 (June 16) 1950

Laboratory Studies on 1950 Outbreak of Influenza. M. R. Hilleman, R. P. Mason and N. G. Rogers.—p. 771.
Salmonella in Hen Eggs. M. J. Carter, M. P. Powell and I. H. Borts. —p. 778.
Prevalence of Poliomyelitis in 1949. C. C. Dauer.—p. 782.

65:795-818 (June 23) 1950

Public Health and Aging. J. W. Mountin.—p. 795.
Studies of Coxsackie Virus: Adaptation of Strain to Chick Embryos. R. J. Huebner, S. E. Ransom and E. A. Beeman.—p. 803.
Medical Examination and Vaccination of Farm Laborers Recruited from Mexico. R. Gregg.—p. 807.
Sickness Absenteeism Among Industrial Workers, Third and Fourth Quarters of 1949. W. M. Gafafer.—p. 810.

65:819-850 (June 30) 1950

Statistical Studies of Heart Disease. M. Gover and M. Y. Pennell. —p. 819.
New Salmonella Type: Salmonella Duval. P. R. Edwards and M. G. West.—p. 839.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

11:183-372 (June) 1950. **Partial Index**

Effect of Iron Preparations on "Antabuse"-Alcohol Toxicosis. E. Jokivartio.—p. 183.
Treatment of Acute Alcoholic States with ACTH and Adrenocortical Hormones. J. J. Smith.—p. 190.
*Evaluation of Aversion Treatment of Alcoholism. F. Lemere and W. L. Voegtlin.—p. 199.
Medical Aspects of Alcoholic Service in General Hospital: Report of 500 Cases. M. Texon.—p. 205.
Factors Affecting Drinking Practices of 383 College Women in Coeducational Institution. F. C. Berezin and N. R. Roth.—p. 212.
Psychotherapy of the Problem Drinker. B. H. Gottesfeld and H. L. Yager.—p. 222.
Bacchus as Health-Giver. A. P. McKinlay.—p. 230.

Aversion Treatment of Alcoholism.—The aversion treatment of alcoholism described by Lemere and Voegtlin consists of producing nausea and the vomiting of alcoholic drinks by the administration of emetine hydrochloride. It is essential that the alcoholic beverage be drunk slightly before the onset of the nausea and vomiting due to emetine, otherwise a true conditioning cannot be obtained. Each treatment session lasts 30 minutes to one hour, and the number of treatments may vary from four to six, usually one every other day. The aversion to alcohol is reinforced by one or two reconditioning treatments at any time that the patient has a desire to drink, or routinely at the end of six months and again a year after the original treatment. Intoxication will prevent conditioning; therefore, if the patient appears to become intoxicated during treatment, the stomach must be emptied immediately and that particular session discontinued. A subsequent treatment will probably be effective with a slight change in technic. The technic of these treatments must be learned by training and experience. Many failures may be traced to lack of technical skill or failure to observe the fundamental requisites for any conditioning procedure. The authors found that indigent, inadequate, psychopathic or extremely neurotic patients respond to treatment only occasionally. A follow-up study of 4,096 patients treated during a period of over 13 years by the conditioned reflex method shows that 44 per cent have abstained from drinking since their first treatment, 60 per cent for one year or longer, 51 per cent for two years or longer, 38 per cent for five years or longer and 23 per cent for 10 years or longer after the first treatment. Of 878 patients who relapsed and were treated again, 39 per cent had abstained from drinking since the last treatment. This gives an over-all abstinence rate of 51 per cent for the period covered by this survey. Conditioned reflex therapy does not preclude other types of treatment for alcoholism and can be used with them in any combination most advantageous for the patient.

Rocky Mountain Medical Journal, Denver

47:405-484 (June) 1950

Presidential Address. I. J. Marshall.—p. 423.
Rheumatic Fever in School Children in Utah. W. R. Young and L. E. Viko.—p. 426.
Use of Radon Ointment in Treatment of Postirradiation Ulcers. P. E. Repass.—p. 432.
Electroencephalography in Clinical Medicine. E. W. Busse and P. W. Dale.—p. 435.
"Lives of Great Men All Remind Us." G. G. Richards.—p. 441.

South Carolina Medical Assn. Journal, Florence

46:177-204 (June) 1950

Critical Review of Exfoliative Cytology as Applied in Diagnosis of Malignant Disease. H. Ulfelder.—p. 177.
Experiences with So-Called Cancer Detection Center: Review of 1000 Cases. T. A. Pits.—p. 178.
Surgery of Thyroid. F. T. Wallace and E. M. Colvin.—p. 182.
Developments in Study of Sickle Cell Anemia. W. M. McCord and V. Mosely.—p. 183.

South Dakota Journal of Medicine, Sioux Falls

3:139-160 (May) 1950

Chloromycetin in Treatment of Rheumatoid Arthritis: Preliminary Report. E. E. Greenough.—p. 139.

3:161-174 (June) 1950

Chemosurgical Treatment of External Cancer: A Microscopically Controlled Method of Excision. F. E. Mohs.—p. 161.
Female Pelvic Surgery: When Is It Necessary. E. Stewart Taylor.—p. 167.
Doctor, Your Special Interests Are Showing. J. C. Foster.—p. 174.

Southwestern Medicine, El Paso, Texas

31:169-204 (June) 1950

Pre- and Post-Operative Care in Children. J. Lozoya.—p. 180.
Case of Extreme Spondylolisthesis with Complete Lumbo-Sacral Dislocation and Downward Overriding of Displaced Fifth Lumbar Vertebra. A. Rodriguez Villarreal.—p. 183.
Chronic Ulcerative Colitis with Case Reports. R. Castañeda a la Torre.—p. 185.
Advantages of Cervical Transperitoneal Transverse Cesarean Section. C. Miranda Garzon.—p. 187.
Dangers and Defenses of Our Airways. R. A. Fenton.—p. 189.

Surgery, St. Louis

27:805-970 (June) 1950

Relation of Acid Secretion to Peptic Ulceration and Its Treatment. H. Ogilvie.—p. 805.
Preliminary Report on New Method of Intestinal Intubation with Aid of Flexible Stylet with Controllable Tip. G. A. Smith and E. L. Brackney.—p. 817.
Do Cancer Patients Want to be Told? W. D. Kelly and S. R. Friesen.—p. 822.
Expanded Interstitial (Thiocyanate) Space in Surgical Patients. I. M. Ariel, A. J. Kremen and O. H. Wangensteen.—p. 827.
Fate of Artery Implanted in Myocardium. F. Glenn and J. M. Beal.—p. 841.
*Ligation of Left Auricular Appendage for Recurrent Embolization. I. D. Baronofsky and A. Skinner.—p. 848.
Functional Bronchial Stenosis. S. Di Rienzo.—p. 853.
Ruptured Appendix: Survey of 541 Cases, 1939 Through 1948. C. H. Avent, C. Love, R. Newman and M. J. Tendler.—p. 862.
*Release of Vasoconstriction by Vasodilator Drugs and Sympathetic Nerve Block: Experimental and Clinical Study. L. G. Crowley, R. A. Murphy Jr. and F. W. Cooper Jr.—p. 879.
Repair of Obturator Hernia with Tantalum Gauze Implant: Case Report. T. D. Throckmorton.—p. 888.

Ligation of Auricular Appendage for Recurrent Embolization.—Dock in 1946 pointed out that one of the most common origins of an embolus in rheumatic mitral stenosis was a mural thrombus within the left auricular appendix. The problem of recurrent embolization, Baronofsky and Skinner believed, could be solved by resection of the auricular appendix. A simpler expedient would be ligation of the left auricular appendage at its junction with the left atrium. After preliminary experiments in dogs, the authors describe observations on three patients in whom ligation of the left auricular appendage was done for recurrent embolization in rheumatic mitral disease. The immediate postoperative convalescent period in all three patients was uneventful. In the first patient a horseshoe type of suture was first placed around the base of the auricular appendage. A secondary tie of umbilical tape was then placed around the base. In the succeeding cases, only a tie of umbilical tape was placed. No effort was made to remove a thrombus if present. The authors believe that it would be much better to place a tie of umbilical tape around the base of the auricle and then to open the tip to remove any thrombus present. A second tie would then be used to close the opening.

Release of Vasoconstriction.—Crowley and his associates believed that in order to study the efficacy of priscoline® (2-benzyl-4, 5-imidazoline hydrochloride), papaverine and nicotine as vasodilators, the clinical state of vasospasm could best be simulated by production of vasoconstriction in normal persons by exposure to a low environmental temperature. The purpose of the study was to elicit information as to the comparative efficacy of these drugs and peripheral sympathetic nerve block as agents for the release of this induced vasoconstriction. Normal young men and women with no evidence of cardiovascular disease were used as subjects. Blood flow changes in response to injections of various drugs and to sympathetic nerve block were measured by means of skin temperature variations, total toe volume and mean pulse volume changes. The subjects were allowed to relax for 30 minutes in a constant-temperature room, with the temperature at 78 F. Skin temperature measurements and plethysmographic results were obtained before the room was cooled to 68 F. The temperature of the room was then maintained at this level, with a variation from 66 to 70 F., for the remainder of the study. After the room was cooled, measurements of blood flow were continued until constant results were obtained. One of the three drugs was then injected intravenously or a posterior tibial nerve block was performed, and the studies were continued for an additional 30 minutes. Nicotinic acid and papaverine were found to be completely ineffective. Priscoline® was moderately effective, but it did not compare favorably with sympathetic nerve block. Nerve block produced the greatest vasodilatation and increase in blood flow. Similar studies using priscoline® were carried out on six patients, four with organic occlusive arterial disease and two with a functional vasospastic disorder. Priscoline® proved to be ineffective as a therapeutic agent for releasing vasoconstriction and increasing blood flow in the former group but was effective in the latter group. It was concluded that priscoline® is not indicated for the treatment of organic occlusive arterial disease but that it may be beneficial in the treatment of functional vasospastic disorders such as Raynaud's disease.

Tennessee State Medical Assn. Journal, Nashville

43:185-220 (June) 1950

Hypertension. E. T. Brading.—p. 185.
Malignant Tumors of Stomach. B. McSwain and D. H. Riddell.—p. 192.
Surgical Treatment of Congenital Multiple Polyposis of Colon. G. T. Howard Jr. and L. W. Trent.—p. 197.

U. S. Armed Forces Med. Jour., Washington, D. C.

1:615-718 (June) 1950. **Partial Index**

Survival in the Cold. C. G. Bly, R. E. Johnson, R. M. Kark and others.—p. 615.
Prolapse of Redundant Gastric Mucosa. C. P. Artz and R. T. Gants.—p. 639.
Superior Vena Cava Obstruction: Review and Report of 2 Cases. J. B. MacGregor and A. W. Stoolfire.—p. 648.
Hip Nail Corrosion. J. Kulowski.—p. 654.
Visceral Leishmaniasis. W. C. Caccamise.—p. 661.
Treatment of Creeping Eruption with Hetrazan: Report of 13 Cases. S. H. Horton Jr.—p. 668.
Eczematous Dermatitis: Rational Medical Approach. H. Blank.—p. 672.
Relationship of Bullous Staphylococcic Impetigo and Exfoliative Dermatitis of Newborn. C. D. Govan Jr., A. L. Cotton and J. O. Rydeen.—p. 682.
Individual in Confinement. J. N. Williams.—p. 687.
Nutrition in Public Health in Japan. P. E. Howe.—p. 694.

Wisconsin Medical Journal, Madison

49:449-556 (June) 1950

Diagnosis and Treatment of Chronic Occlusive Disease of Peripheral Arteries. N. W. Barker.—p. 470.
Insulin and Insulin Mixtures. B. J. Peters.—p. 475.
Hemorrhagic Disturbances in Childhood. H. N. Sanford.—p. 477.
Cancer of Face and Oral Cavities. E. R. Schmidt.—p. 480.
Significance of Radioisotopes to Radiology. J. W. J. Carpender.—p. 489.
The Physician and Mental Health. R. A. Jensen.—p. 493.
Paroxysmal Ventricular Tachycardia: Report of Case. H. L. Correll.—p. 507.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted.
Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

19:273-352 (May) 1950

Pulmonary Hydatid Disease: Review of 478 Cases. N. Waddle.—p. 273.
*Unilateral Renal Ectopia with Renal Carcinoma. M. S. S. Earlam, A. L. Carrodus and V. S. Howarth.—p. 291.
*Histology of Gastritis. R. K. Doig and R. Motteram.—p. 296.
Diverticula of Small Intestine. E. S. J. King.—p. 301.
Grafting of Homogenous Bone and Cartilage. H. K. Christie.—p. 320.
Carcinoma of Uterus: Methods and Results of Treatment at the Alfred Hospital Clinic, 1928-1943. J. M. Buchanan.—p. 335.

Unilateral Renal Ectopia with Renal Carcinoma.—Earlam and his associates feel that the occurrence of a tumor of the hypernephroma type in a homolateral ectopic kidney is very uncommon. They report one case, which they believe to be the third to be recorded in the world literature and possibly the first in which operative removal was successfully carried out. A man, aged 41 complained of attacks of severe pain in the left side of the hypochondrium. His past history included an attack of appendicitis some years earlier and the repair of a right inguinal hernia. He had also suffered a severe crushing injury to the lower part of the abdomen, from which he had made a complete recovery. A tumor could be felt in the hypogastrium, slightly to the right of the midline. Further examinations, including a bilateral retrograde pyelography, showed a somewhat bizarre-appearing right ectopic kidney. Cystoscopy was repeated. Filling with opaque medium occasioned a severe attack of pain, which the patient located in the left side of the hypochondrium, stating that it reproduced the pain of which he complained. Nephrectomy was decided on, because, in spite of the contralateral nature of the pain, it was believed that the pain was due to some lesion in the right kidney. It was felt also that a tumor could be present in the ectopic kidney, partly because such a kidney, unless pathologically enlarged, should not have been palpable through the abdominal wall and partly because of the pyelographic deformity. A midline lower abdominal incision was made. The kidney was removed. Six months after operation the patient was well. The removed kidney was irregularly oval in shape, while its lower pole was enlarged by a lobulated mass of tumor tissue, which proved to be a carcinoma formed of clear cells. The authors comment on the crossed nature of the patient's pain and on several other interesting features of the case.

Histology of Gastritis.—Doig and Motteram describe a technic for gastric biopsy, with the use of a flexible gastric biopsy tube. With this instrument fragments from the mucosa of the body of the stomach can be readily obtained and serial studies made. The method has two disadvantages. First, the biopsy is done blindly; it is therefore of no use for diagnosis of ulcer from cancer. Gastroscopic biopsy would be better. Second, the specimen obtained is representative of a diffuse lesion in the body of the stomach. The method has its chief use in diffuse lesions of the body and fundus of the stomach when radiologic examination shows no local ulcerative or neoplastic change. It is of no use in the diagnosis of antral gastritis. Various stains are used, such as hematoxylin and eosin, hematoxylin and mucicarmine and a stain for pepsinogen granules. To date, biopsy has been attempted 370 times in the authors' clinic and it has been successful 304 times. They demonstrate the histologic features of gastritis in four patients and briefly set forth the clinical features of each case. The first case illustrates that "gastritis" may be present even when psychogenic factors are present. The second case shows an atrophic change with active inflammation and a long history of flatulent dyspepsia. The third case shows the dyspepsia which may antedate the development of pernicious anemia by some years. The fourth case gives positive evidence of an alternative lesion in patients with greatly reduced acid secretion and a long history of dyspepsia. A diagnosis of gastritis can be made in patients when there is no evidence of peptic ulcer or of carcinoma.

British Journal of Radiology, London

23:317-380 (June) 1950

Horizontal Body Section Radiography. J. J. Stevenson.—p. 319.
*Larsen-Johansson Disease of Patelia: 7 New Case Records. Its Relationship to Other Forms of Osteochondritis. Use of Male Sex Hormones as New Form of Treatment. J. Wolf.—p. 335.
Results of Uptake and Excretion Tests with Radio-Iodine. T. H. Oddie and R. K. Scott.—p. 348.
Gantry Type of Mounting for High Voltage X-Ray Therapy Equipment. P. Howard-Flanders and G. R. Newbery.—p. 355.
Simple Methods of Isodose Contour Projection for Symmetrical and Unsymmetrical Fields. J. L. Howarth.—p. 358.
Note on Calculation of Dose in X-Ray Fields. M. J. Day.—p. 368.

Larsen-Johansson Disease of Patella.—According to Wolf, Larsen-Johansson disease of the patella is a form of osteochondritis affecting an accessory center of ossification at the lower pole of the patella. The disease is variously known as epiphysitis patellae, rotular apophysitis, juvenile arthropathy, growth patellitis and patellosis of adolescents. Wolf discusses the association of Larsen-Johansson disease with other forms of osteochondritis, particularly with Osgood-Schlatter's osteochondritis of the tibial tubercle. This frequent association suggests a common etiology. The main etiologic factors are believed to be endocrine disturbances, usually combined with repeated light trauma or strain, and a familial tendency. The accidental discovery of most cases of Larsen-Johansson disease suggests that the incidence is probably higher than the few recorded cases seem to indicate. The author reports on seven new cases, four boys and three girls between the ages of 10 and 14 years. In one of these cases Schlatter's disease was also present. The condition was bilateral in five and unilateral in two of the cases. The use of male sex hormone (testosterone) combined with immobilization and rest is recommended as a valuable aid in the severer cases of Larsen's and Schlatter's diseases, as well as in other forms of osteochondritis due to endocrine disturbances.

British Medical Journal, London

1:1283-1330 (June 3) 1950

*Valvulotomy for Mitral Stenosis: Report of 6 Successful Cases. C. Baker, R. C. Brock and M. Campbell.—p. 1283.
Pharmacology of *d*-O.O-Dimethyl Tubocurarine Iodide in Relation to Its Clinical Use. H. O. J. Collier.—p. 1293.
Dimethyl Ether of *d*-Tubocurarine Iodide as Curarizing Agent in Anaesthesia for Thoracic Surgery. H. B. Wilson, H. E. Gordon and A. W. Faffan.—p. 1296.
Nine Blood-Group Antibodies in Single Serum after Multiple Transfusions. J. O. Collins, R. Sanger, F. H. Allen and R. R. Race.—p. 1297.
Multiple Antibody Response to Repeated Transfusions. R. H. Malone and J. Cowen.—p. 1299.
Liver Damage in Ulcerative Colitis. F. L. Dyson.—p. 1301.

Valvulotomy for Mitral Stenosis.—Baker and his collaborators discuss the selection of patients for valvulotomy and the surgical problems. They report on eight patients in whom they performed valvulotomy. These were selected from a large number of patients with mitral stenosis. The operation was successful in six. The other two patients died. The authors preferred the direct relief of the valvular obstruction to the various indirect methods, such as some form of a venous shunt. These indirect operations aim only at symptomatic relief and are at least as serious as valvulotomy, which aims at achieving some degree of cure. The valve is better approached through the left auricular appendage than through the left ventricle. The authors discuss the contraction of the stenosed valve and stress the importance of enlargement of the opening along the line of the commissures. In this way it is possible, in addition to increas-

ing the opening, to reconstruct two valve flaps; these by virtue of their increased mobility are not likely to encourage regurgitation but may even reduce it. The manipulations are well tolerated; in most cases the valve can be split with the finger or the finger can be used to carry a valvulotome. The most suitable cases are those with pure mitral stenosis and a reasonably good myocardium, with progressive lung symptoms and signs, but before pulmonary hypertension is too far advanced. Contraindications are rheumatic activity, associated aortic regurgitation or much mitral regurgitation, gross enlargement of the heart or of the left atrium, auricular fibrillation or congestive failure. Cardiac catheterization is valuable especially for determination of the pressure and the changes in the pulmonary artery and changes in cardiac output, with and without exercise. The six survivors have improved. Valvulotomy for mitral stenosis is a practical procedure.

Journal of Bone and Joint Surgery, London

32B:145-290 (May) 1950

Oblique Displacement Osteotomy for Osteoarthritis of Hip Joint. G. V. Osborne and W. H. Fahrni.—p. 148.
Pseudarthrosis of Hip Joint. R. G. Taylor.—p. 161.
Use of Artificial Femoral Head for Arthroplasty of Hip Joint. J. Judet and R. Judet.—p. 166.
Treatment of Quiescent Tuberculosis of Hip Joint by Excision and "Dynamic" Osteotomy. A. Gruca.—p. 174.
Posterior Exposure of Hip Joint. A. Gibson.—p. 183.
Ischio-Femoral Arthrodesis of Hip in Tuberculosis: Anterior Approach. W. H. Kirkaldy-Willis.—p. 187.
Open Operation for Congenital Dislocation of Hip: Results in Forty-Four Cases (Fifty Hip Joints). E. Platou.—p. 193.
John Hunter's Specimen of Talocalcaneal Bridge. R. I. Harris and T. Beath.—p. 203.
Tarso-Epiphysial Aclasis: Congenital Error of Epiphysial Development. D. Trevor.—p. 204.
Hallus Rigidus. A. C. Bingold and D. H. Collins.—p. 214.
Internal Rotation Dislocation of Shoulder: Report of Case. L. S. Michaelis.—p. 223.
Osteolytic Bone Syphilis. H. McGladdery.—p. 226.
Osteochondritis of Cuboid Associated with Tuberculosis of Adjacent Tarsal Bones: Report of Case. F. Y. Khoo.—p. 230.
Unusual Compound Fracture. J. G. O'Connell.—p. 233.

Medical Journal of Australia, Sydney

1:581-612 (May 6) 1950. **Partial Index**

Clinical Aspects of Poliomyelitis During Epidemic of 1949. S. Williams.—p. 582.
Recent Developments in Epidemiology of Poliomyelitis, with Special Reference to Epidemic of 1949. B. P. McCloskey.—p. 583.
Poliomyelitis—Hospital Management. H. McLorinan.—p. 587.
After-Care of Poliomyelitis. J. Macnamara.—p. 588.

1:613-648 (May 13) 1950. **Partial Index**

Mortality in Australia: Population and Mortality Data. H. O. Lancaster and W. J. Willcocks.—p. 613.
Regional Plan of Hospital Development. J. H. Lindell.—p. 619.
Further Experiences with Inversion Operation for Indirect Inguinal Hernia. C. Craig.—p. 622.
Medical Account of Voyage on Convict Vessel. M. L. Verso.—p. 625.

New Zealand Medical Journal, Wellington

49:81-194 (April) 1950. **Partial Index**

Standards in Medicine. R. S. Aitken.—p. 97.
Chloroform in Obstetrics. T. F. Corkill.—p. 105.
*Study of Early Ambulation. L. A. Riddell.—p. 113.
Studies on Pathogenesis of Rheumatic Fever: I. Antistreptolysin Titre in Acute Tonsillitis, in Patients Admitted for Tonsillectomy, in Rheumatic Fever and in Control Groups. L. Kirschner and D. J. A. Gallagher.—p. 118.
Spontaneous Compression of Median Nerves in Carpal Tunnel. D. A. Ballantyne and E. Y. Comrie.—p. 144.
Healing of Pathological Fracture by Hormone Therapy. H. J. H. Hiddlestone.—p. 146.

Early Ambulation.—Riddell says that acceptance of the principle of early ambulation after surgical procedures is gaining ground in New Zealand but that many surgeons still remain unconvinced. Most of his surgical patients, with few exceptions, were made to get up on the day of the operation or on the following day. This report is concerned chiefly with 150 patients in whom the peritoneal cavity was opened or in whom the lumbar or perineal musculature was sutured. Results in these cases were compared with those in 100 cases of similar type in which early ambulation was not employed. Early ambulation did not cause an increase in complications, and there was a saving in beds and hospital time.

Acta Medica Scandinavica, Stockholm

137:305-380 (March 30) 1950

*Clinical Studies on Malignant Hepatitis. H. A. Salvesen and O. Lödöen.—p. 305.
Neurologic Complications in Acute Infectious Hepatitis. L. Thorling.—p. 322.
Prognosis of Diabetes Mellitus: Study of 221 Patients Surviving at Least 15 Years. J. Mårtensson.—p. 335.
Study of Histamine-Induced Gastric Secretion During Artificial Fever. G. Santesson and J. Tomenius.—p. 355.
Study of Thrombopoiesis Before and After Spontaneous Remission in Case of Acute Idiopathic Thrombopenic Purpura. F. Kissmeyer-Nielsen.—p. 367.
Aneurysm of Pulmonary Artery. R. Grelland.—p. 374.

Clinical Studies on Malignant Hepatitis.—Salvesen and Lödöen review observations on 26 cases of malignant hepatitis. They apply the term "malignant" to that form of hepatitis which lasts more than three months or terminates in death with signs of acute or subacute yellow atrophy. All except three of the 26 patients were women. The majority of the fatal cases occurred during the war period. Fourteen cases of benign hepatitis were observed during the time that the 26 malignant cases were observed; these were divided equally among the two sexes. Of the 23 women with the malignant type 18 were dead and only two were cured after nine and 11 months. Three are living with a chronic hepatitis and have been observed for three and a half, four and a half and six years, respectively. One of the three men with the malignant type of hepatitis died. Of the 19 patients who died, 14 did so within a year and five died 15 months to five years after onset. The disease often causes severe pain resembling that caused by gallstones. Ascites may occur and disappear; glossitis may be severe; hematemesis may appear; there may be incipient coma (transient "absence"); the serum proteins show decisive changes, the albumin-globulin ratio may be well below one (enormous rise in globulin, but hypoalbuminemia) and there frequently exists a decided hyperproteinemia. The authors report the histories of the three patients in whom the malignant hepatitis had a protracted course. Salvesen and Lödöen do not believe that the malignant form of hepatitis has an etiology different from that of ordinary sporadic and epidemic hepatitis seen in peacetime.

Archives des Maladies du Coeur, Paris

43:97-192 (Feb.) 1950. **Partial Index**

Contribution to Study of Shunts in Interauricular Communications. P. Soulié, F. Joly, J. Carlotti and J. R. Sicot.—p. 97.
Abnormal Aspects of Morgagni-Adams-Stokes Syndrome: Pseudocomatose Long-Lasting Syncopes and Extreme Bradycardia. A. Gonin and R. Froment.—p. 121.
*Early Effects of Intravenous Injection of Mercurial Diuretic on Return Circulation. P. Kartun, P. Paris, J. Nory and G. Bousquet.—p. 133.
*Therapeutic Effects of Quadruple Action Vaccine "Tetravaccin" of Pasteur Institute in Rheumatic Cardiopathies Not Due to Osler's Type of Endocarditis. L. Gaggini.—p. 157.

Intravenous Injection of Mercurial Diuretic.—Kartun and co-workers injected 2 to 4 cc. of novurit (sodium salt of trimethylcyclopentane carboxylic-acid-allylaminemethoxy-mercuriacetate carboxylic acid) intravenously to 22 patients, six with arterial cardiopathy, eight with mitral cardiopathy, five with chronic pneumopathy complicated by cardiac decompensation and three with adhesive pericarditis. The right ventricular pressure and the peripheral venous pressure were measured before the injection of the mercurial diuretic and repeatedly after the injection. The right auricular pressure and the pressure of the pulmonary artery were measured in one instance each. Sixteen patients reacted positively with a rapid drop in the peripheral venous, auricular, right ventricular and pulmonary pressure of 15 to 50 per cent on the average. Six patients did not respond to the injection of the drug. The drop in the blood pressure was almost constant in the patients with arterial and mitral cardiopathy and was less constant in the patients with pulmonary cardiopathy. The patients with adhesive pericarditis did not show any lowering of blood pressure. Paroxysmal dyspnea of cardiac patients and the acute pulmonary edema in particular may be effectively treated with mercurial diuretics. The absence of the effect of the drug in patients with pronounced peripheral signs of long standing suggests that the mercurial derivatives act by a peripheral mechanism.

Quadruple Action Vaccine in Rheumatic Cardiopathy.—Gaggini treated five adults and five children with a slow obstinate type of acute articular rheumatism, with "antipyogenic tetravaccin" prepared from streptococci, staphylococci, Bacillus pyocyaneus and Bacterium cutis commune. The treatment was instituted with small doses of 0.125 to 0.25 cc. The doses were increased progressively up to 2 cc. A course of 12 injections was given and repeated every three months. The patients showed improvement with stabilization of temperature below the initial level, disappearance of asthenia and of the slight dyspnea characteristic of cardiac patients with hyposystole. Weight increased and the general condition improved. Several patients were able to resume almost normal activities. Improvement of the acoustic signs suggested an effect of the vaccine on the inflammatory element, but definite sclerotic lesions did not change. Three additional children with malignant infective endocarditis were treated with the preparation but did not respond. This treatment is not a substitute for the classic treatment with salicylates, aminopyrine and antipyrine but may be used advantageously as an adjunct.

Arch. Urug. de Med., Cir. y Especial., Montevideo

36:125-488 (Feb.) 1950. **Partial Index**

*Syndrome of Cardiac Anomaly and Cerebral Abscess. R. Arana Iñiguez, R. Rodríguez Barrios, R. Di Bello and N. Azambuja.—p. 125.

Congenital Cardiac Anomaly and Cerebral Abscess.—Arana Iñiguez and collaborators state that the association of tetralogy of Fallot with paradoxical embolic cerebral abscess is frequent but is not well known. The appearance of cerebral symptoms in a patient with the tetralogy of Fallot is suggestive of a paradoxical cerebral abscess, even if the presence of focal infection cannot be determined. The diagnosis should be verified by encephalography. Operation is indicated if positive. Abscesses of this type are solitary and have a good prognosis when operation is performed early. A woman of 36, with tetralogy of Fallot, had an atypical paradoxical cerebral abscess without an apparent focal infection. The clinical and neurologic symptoms were controlled by intramuscular administration of penicillin and streptomycin. Six months later purulent meningitis developed, which, as shown by ventriculography, was due to rupture of the abscess into the ventricles.

Beiträge zur Klinik der Tuberkulose, Heidelberg

102:487-638 (Feb. 9) 1950. **Partial Index**

Tuberculosis in Germany During and After World War II. K. Lydtin.—p. 487.
Reactivation of Pulmonary Tuberculosis. J. E. Kayser-Petersen.—p. 512.
Atelectasis of Pulmonary Tuberculosis and Problem of Cavities in Light of Recent Research. A. Sturm.—p. 543.
Relations Between Tuberculosis and Sympathetic Nervous System. E. Kehler.—p. 554.
Tuberculosis and Character. W. Roloff.—p. 567.
Streptomycin Therapy in Tuberculous Meningitis. F. Goebel.—p. 573.
Adrenal Cortex and Tuberculosis. H. Trautwein.—p. 578.
*Nonspecific Action of Thiosemicarbazone. L. Heilmeyer.—p. 583.
Changes in Biologic and Serologic Reactions When Tuberculosis Is Treated with Thiosemicarbazone. G. Korb.—p. 586.
Chemotherapeutic Possibilities in Tuberculous Infections. G. Domagk.—p. 603.
*Thiosemicarbazone in Pulmonary Tuberculosis: Experiences over Period of 30 Months. P. Klee.—p. 625.

Nonspecific Action of Thiosemicarbazone.—Heilmeyer states that the tuberculostatic action of thiosemicarbazone in vitro is considerably less than that of other substances, such as of paraaminosalicylic acid, but in clinical application it is active in smaller doses. Whereas the law of mass applies for most other chemotherapeutic substances, that is, the higher the concentration in the blood the greater the effect, this does not apply to thiosemicarbazone. Small doses (0.1 to 0.3 Gm. daily) are more effective than massive doses. These and other observations seem to indicate that the action of thiosemicarbazone is not due entirely to its effect on the tubercle bacillus. The effect on the sedimentation rate is noteworthy; it subsides more rapidly than does the curative process; it has even decreased when there was a clinical exacerbation. This effect on the sedimentation rate becomes evident not only in tuberculosis but also when thiosemicarbazone is given to patients with rheumatic polyarthritis, gonorrheal arthritis or tumor metastases. Since sedimentation is a manifestation of the colloidal structure, the changes that take place in the plasma colloids under the influence of thiosemicarbazone were investigated. It was found that this effect of thiosemicarbazone represents something new and unique since it cannot be effected with other pharmacologic substances. Conditions that are accompanied with a great increase in the sedimentation rate are decisively influenced by thiosemicarbazone. In chronic articular rheumatism, normalization of the colloid structure of the plasma accompanies a decrease in the inflammatory manifestations. The swelling of the joints and the pain decrease, and the joints can be moved more readily. If the administration of thiosemicarbazone is interrupted, the symptoms recur. Similar effects have been observed in erythema nodosum, in exudative pleurisy and in some nephroses. It is peculiar that such effects cannot be produced in all cases. In a case of severe allergy (70,000 leukocytes with 80 per cent eosinophils) and with swellings resembling elephantiasis, the patient lost 20 pounds (9 Kg.) in two weeks and swellings that had existed for years subsided, but when administration was discontinued the swellings returned. The therapeutic importance of thiosemicarbazone is not limited to tuberculosis.

Thiosemicarbazone in Pulmonary Tuberculosis.—Klee reviews observations on patients with pulmonary tuberculosis who were treated with two thiosemicarbazone preparations in the course of 30 months. The drugs were used in 200 patients with pulmonary tuberculosis in various stages, but only 100 of these are evaluated in this study, those receiving collapse therapy and those with primary exudative pleuritic type being excluded. About half of the patients showed a favorable course during the treatment. Patients with early infiltrating lesions and those with proliferative-cirrhotic processes practically all showed improvement. Patients with indurations and adhesions and even those with cavities often improved, but those with exudative-progressive lesions rarely showed improvement. Bronchogenic and hematogenic foci and disseminations were rarely observed during prolonged treatment with thiosemicarbazone. The course of miliary tuberculosis was greatly retarded, with considerable improvement in the clinical picture and almost complete disappearance of the roentgenologic shadows. Necropsy often revealed that the miliary nodules had been transformed into connective tissue, so that their tuberculous nature was indicated only by the presence of a few giant cells. Two patients died four and seven months after onset of treatment for tuberculous meningitis. The author feels that in such patients treatment with thiosemicarbazone should be combined with streptomycin. New tuberculous infiltrations accompanied with fever are sometimes observed when thiosemicarbazone is discontinued, but when treatment is resumed they often disappear rapidly. Complications of collapse therapy were considerably reduced when the collapse was induced under thiosemicarbazone "protection." In tuberculous empyemas with thickening of the pleura and in other processes in which the access of the drug to the lesion was difficult, there was no therapeutic effect. All experience at Klee's clinic indicated that the treatment must be prolonged and that it can be continued in ambulatory patients. In one patient it was continued for 486 days.

Deutsche medizinische Wochenschrift, Stuttgart

75:409-440 (March 31) 1950. **Partial Index**

Internal Medicine and Theory of Sleep. L. R. Müller.—p. 409.
Degenerative Processes. H. J. Oettel.—p. 412.
Glossopharyngeal-Vagal-Accessory Neuritis Following Tonsillitis. H. Rosenhagen.—p. 414.
*Therapy of Endocarditis Lenta. E. Boden and F. Loogen.—p. 422.
*Treatment of Hypertension by Intravenous Administration of Procaine Hydrochloride in Honey (Melcain). P. Beckmann.—p. 426.

Therapy of Endocarditis Lenta.—Boden and Loogen treated 71 patients with endocarditis lenta with bacteriostatic drugs and antibiotics. Twelve patients were given 3 to 10 Gm. of supronal (a mixture of equal parts of sulfamerazine and 4-aminomethylbenzene sulfonamide salt of sulfathiourea) daily for twelve to thirty-five days. One patient recovered; sepsis was controlled in 1 additional patient; temporary improvement with tendency to recurrence resulted in 7 patients, and 3 were

therapeutic failures. Fifteen patients were given 400,000 units of penicillin daily for thirty-eight days. Three patients recovered; sepsis was controlled in an additional 6, and temporary improvement with tendency to recurrence resulted in 6. Forty-one patients were given combined treatment with 8 to 10 Gm. of supronal daily for twelve to thirty-five days and 400,000 to 800,000 units of penicillin daily for twenty-one to one hundred and thirty days. Eight patients recovered; sepsis was controlled in 6 others; temporary improvement with tendency to recurrence resulted in 18, and 9 were therapeutic failures. Three patients were given 2 to 3 Gm. of streptomycin for ten to thirty days, and temporary improvement resulted in all. Sepsis thus was controlled in 25 of 71 patients (38 per cent), 12 of whom were discharged with little remaining cardiac damage and were able to work again. Degeneration of the cardiac valves was pronounced in the remaining 13 patients, making it impossible for them to work, and 5 of them died from cardiac decompensation within three to five months after their discharge. The best results were obtained in patients in whom treatment was instituted within the first two months of the disease. The inadequate supply of antibiotics during the years after the war in Germany, the poor state of nutrition and the resulting diminished resistance were responsible for the results which were inferior to those obtained in other countries.

Treatment of Hypertension with Procaine Hydrochloride in Solution of Honey.—Beckmann treated 24 patients with hypertension by intravenous administration of melcain, a 1 to 2 per cent solution of procaine hydrochloride combined with a 20 to 40 per cent solution of honey. Injections were made twice a day for several weeks. The systolic pressure was reduced on the average by 50 mm. in all the patients. The lowering of the diastolic pressure was not of equal extent. Permanent drop in blood pressure resulted rapidly from several injections in some patients, while the same result was obtained in other patients only after some delay. Lowering of blood pressure by 80 to 100 mm. occurred in 6 patients, by 50 to 80 mm. in 4 patients, by 30 to 50 mm. in 8 patients and by less than 30 mm. in the remaining patients. Lowering of blood pressure by 5 to 15 mm. resulted from the intravenous administration of the procaine mixture in persons with normal blood pressure. There were no untoward reactions, although amounts up to 10 cc. of procaine hydrochloride in 2 per cent solution were administered twice daily. An allergic reaction may result from the administration of this procaine mixture in allergic patients, but this was not observed by the author. A direct effect of the drug on the autonomous nervous system within the vascular wall was probably responsible for the effect.

75:473-532 (April 14) 1950. Partial Index

*Further Experiences with Streptomycin, Paraaminosalicylic Acid and Thiosemicarbazone Praparation in Therapy of Internal Tuberculosis. L. Heilmeyer.—p. 473.
Hemodynamic Effects of Digitalis and Strophanthin. E. Wollheim.—p. 482.
Pathogenesis and Evaluation of Traumatic Coronary Insufficiency. M. Hochrein.—p. 490.
Enteral Acetylene Resorption Test: New Liver Function Test. N. Henning, H. Kinzlmeier and L. Demling.—p. 495.
*Dark Field Studies on Erythrocytes. U. Haenel and G. Riva.—p. 498.

Chemotherapy of Tuberculosis.—Heilmeyer says that thiosemicarbazone has now been in use in the treatment of tuberculosis for over three years and paraaminobenzoic acid and streptomycin for over two years. Results obtained with these types of chemotherapy represent only an additional factor in the therapeutic armamentarium. All other proved methods cannot be dispensed with. A permanent cure by chemotherapy alone is possible only in cases in which no cavities have developed. Cavities must be treated by surgical intervention. Chemotherapy is of value, because it renders amenable to operation more patients than would be operable without it. Another advantage is that it affords protection, so that operations can be more extensive and more frequent than was the case formerly. Although dissemination is not completely prevented, the incidence is greatly reduced. Patients with tuberculosis must be kept under careful control, because the danger of relapse is great. Chemotherapy must be continued much longer than was originally assumed. Short courses of streptomycin produce only a temporary effect. Ambulatory treatment is not advisable except in mild cases. The patient with active tuberculosis still requires treatment in a sanatorium or clinic.

Dark Field Studies on Erythrocytes.—Haenel and Riva used dark field microscopy for the demonstration of basophilic substances in erythrocytes, such as the Substantia granulofilamentosa, basophilic stippling or polychromasia, as well as for degenerative changes in erythrocytes (Heinz bodies) which develop under the influence of certain blood toxins. The achromocytes recently described by Heilmeyer and Eilers were likewise studied with the dark field method. The use of this method in stained preparations proved definitely superior to microscopy in the direct light. The authors were able to prove that erythrocytes which show basophilic stippling in fixed blood smears are identical with the reticulocytes in the specimens prepared with the supravital stains. The dark field method proved valuable also in examination of erythrocytes that had been damaged by substances exerting a toxic effect on the blood. In this case the method made it possible to differentiate degenerative changes on the basis of their metachromasia from the Substantia granulofilamentosa of the reticulocytes. Achromocytes likewise could be more easily recognized in the dark field. The authors were able to describe two new achromocytes: one with basophilic stippling, which corresponds in the fixed smear to the achromoreticulocyte of the supravitally stained preparations; the other was the achromocyte with the true Heinz body, which the authors found in a patient in whom hemolytic anemia with inner bodies had developed under toxic influences. All erythrocytic structures, with the exception of degenerative changes, were visible in the dark field only after staining.

Klin. Monatsbl. für Augenheilkunde, Stuttgart

115:673-788 (Nov. 7) 1949. Partial Index

Deposits of Crystals of Calcium Carbonate in Conjunctiva Following Carbide Corrosion. E. Heinsius.—p. 673.
*Eye Injuries Caused by Indelible Pencil. A. Passow.—p. 680.

Indelible Pencils as Cause of Eye Injuries.—Passow made experiments on the eyes of rabbits and on human eyes. He obtained information regarding the incidence, type and course of eye injuries caused by indelible pencils from eye clinics and ophthalmologists. The aim of this investigation was to ascertain whether the customary methyl violet pencil should be replaced by one consisting of methylene blue. Experiments on animal and human eyes revealed that there is a considerable difference between the damaging effect on tissues of methyl violet and methylene blue in that the necrotizing effect of methyl violet is much greater than that of methylene blue. The inquiries revealed that eye injuries due to indelible pencils are rare, that the majority are not serious and that the severer cases (rare) are usually self inflicted (in criminals and in mental patients). The author does not consider justifiable the replacement of methyl violet pencils by methylene blue pencils.

Minerva Ginecologica, Turin

2:103-144 (March) 1950. Partial Index

*Psychosomatic Aspects of Obstetrics: Rhinomedication in Labor. G. Valle—p. 106.
Syndrome from Unilateral Ovariectomy. E. Robecchi.—p. 111.

Psychosomatic Aspects of Obstetrics.—Valle reports observations on 200 unselected parturients in two groups of 100 parturients each. One group was treated by cocainization of the turbinate and of the nasal fossa, the other by application of water. The procedure was used once or twice during labor in both groups. There was no effect noted on the uterine and auxiliary muscle contractions, but an analgesic effect was evident in one third of the cases with cocaine and one fourth with water. Psychoanalysis revealed that the patients who responded to the treatment were in most cases women with symptoms of nervous instability. The results demonstrate that anesthesia of nasal mucosa acts by suggestion and that psychotherapy is of value in diminishing pain in labor.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

94:785-884 (March 25) 1950. **Partial Index**

Spontaneous Mediastinal Emphysema with Asthmatic Dyspnea. G. A. Lindeboom.—p. 797.
Behavior of Blood Level of Penicillin Following Injection of Suspension of Procaine Penicillin in Water. P. Glaser.—p. 802.
Paralysis of Accessory Nerve Following Injection of Antidiphtheria Serum. A. Verjaal and R. A. van Valkenburg.—p. 808.
*The Leiden Manipulation: Modification of Artificial Respiration According to Silvester's Method. J. W. Loos.—p. 813.

Modification of Artificial Respiration According to Silvester.—Loos describes a new manipulation that is added to Silvester's artificial respiration. This manipulation aims to prevent the paradoxical movement of the diaphragm. The legs of the victim are spread apart so that a second helper can kneel between them. This second helper grasps the legs of the victim and flexes them in the cranial direction. This entails maximal bending of the legs in the knee and hip joints. This is done while the first helper executes the expiratory movement according to Silvester. During the inspiratory movement the legs of the victim are stretched out again. This manipulation reduces the size of the abdominal cavity and pushes the diaphragm upward and exerts pressure on the veins of the thigh, groin and abdomen. Although this manipulation has not previously been employed for the purpose here described, it is not entirely new, having been used in Leiden for the treatment of asphyctic infants, because of which it has been designated the manipulation of Leiden.

94:885-956 (April 1) 1950. **Partial Index**

Study of Sensitivity to Tuberculin by Means of Purified Protein Derivative (Tuberculin Preparation). J. E. Dinger, H. L. Wolff and Lie Kian Joe.—p. 892.
Therapy of Cervical Cancer. J. T. van der Werff.—p. 895.
*Pedicled Flaps in Therapy of Ulcus Cruris. R. Brummelkamp.—p. 902.
*Pancoast Syndrome. J. Swierenga.—p. 907.

Pedicled Flaps for Crural Ulcer.—Brummelkamp reports observations on five patients, some of whom had had crural ulcer for 15 to 20 years. They were cured by the transplantation of a pedicled skin flap from the calf of the other leg.

Pancoast's Syndrome.—Swierenga describes the syndrome which according to Pancoast is characteristic of tumors of the superior pulmonary sulcus. These tumors do not originate from the lung, pleura, ribs or mediastinum. The characteristic syndrome caused by them is explained by the fact that they grow into the brachial plexus and the cervical sympathetic. The author differentiates three groups of symptoms: general, neurologic and roentgenologic. The general symptoms may be somewhat atypical; there may be fatigue, loss of weight and cough. The neurologic symptoms are more characteristic. The patients complain of shoulder and arm pain, and Horner's syndrome appears. Roentgenoscopy reveals a shadow in the region of the pulmonary apex. The author cites a man, aged 45, with the Pancoast's syndrome. In this patient a neurologist first diagnosed the disorder as a neuritis of the brachial plexus. Roentgen examination of the thorax later disclosed the tumor shadow. The author stresses the importance of thoracic roentgenoscopy in patients with the aforementioned symptoms.

Nordisk Medicin, Stockholm

43:695-736 (April 28) 1950. **Partial Index**

*Diabetes and Pregnancy. N. E. Påhlsson.—p. 697.
Insertion of Bag for Induction of Labor. R. C. Langballe.—p. 699.
Occipitoposterior Presentation. L. Ploman.—p. 701.
Quinidine in Treatment of Auricular Fibrillation in Patients Past 50. K. Fischermann and P. Schleisner.—p. 705.
Gas Peritonitis in Cesarian Section. K. Kulseng-Hanssen.—p. 706.
Primary Carcinoma of Fallopian Tube. F. B. Hartvigsen.—p. 708.
Aplastic Anemia. A. H. Berg.—p. 712.

Diabetes and Pregnancy.—Påhlsson says that, in the 47 pregnant women with diabetes treated at the Karolinska Sjukhus from 1940 to 1949, pregnancy toxicosis occurred in 23, with albumin in the urine, eclampism or eclampsia. Four infants weighed over 5,000 Gm. at birth and 15 over 4,000 Gm. There were congenital malformations in two cases. Excluding results in the 10 cases of cesarian section, there were 13 stillbirths and six neonatal deaths. There was one maternal death, due to uterine rupture on normal delivery of a giant fetus.

Policlinico (Surg. Sect.), Rome

57:57-120 (April) 1950. **Partial Index**

*Intraarterial Penicillin Therapy and Bier's Passive Hyperemia in Hematogenous Osteomyelitis. G. Marinaccio.—p. 87.

Therapy of Hematogenous Osteomyelitis.—Marinaccio resorted to intra-arterial penicillin therapy and passive hyperemia in a large number of cases of acute, subacute and chronic hematogenous osteomyelitis. Ten cases are reported. The subperiosteal abscess was drained before treatment was started and, again, every other day, in search of the causal bacteria. Passive hyperemia was induced 10 minutes before the intra-arterial injection and maintained for four or six hours after it. Penicillin was injected daily into the femoral artery in doses of 100,000 units for each injection, up to disappearance of subperiosteal exudate. The total dose varied between 1,000,000 and 2,500,000 units. The combined treatment, when given early in the course of acute osteomyelitis, made immobilization of the limb unnecessary and resulted in normal walking within three weeks. Periodic roentgen examination of the limb was done for one or two years after treatment, showing permanent cure of lesions, without sequelae. The author estimated the concentration of penicillin in the blood of the limb in passive hyperemia and in that of the contralateral limb. He found that efficient blood concentration of penicillin lasted four hours after the intra-arterial injection in the hyperemic limb and two hours in the contralateral limb. The author concludes that (1) acute hematogenous osteomyelitis constitutes the main indication for the combined penicillin passive hyperemia treatment and (2) intra-arterial penicillin therapy in the course of Bier's passive hyperemia is harmless and is of great therapeutic value.

Prensa Médica Argentina, Buenos Aires

37:757-804 (April 14) 1950. **Partial Index**

*Treatment of Rheumatic Fever. Hypothesis on Pathogenesis. R. Q. Pasqualini.—p. 757.

Therapy of Rheumatic Fever.—Pasqualini reports on 600 cases of rheumatic fever in soldiers between the ages of 18 and 20 years. The patients were given 1 Gm. of sodium salicylate every two hours up to a total daily dose of 12 Gm. until the erythrocyte sedimentation rate returned to normal, and then a daily dose of 8 Gm. for a period of two or three months. The drug was given orally, intravenously or rectally. The best results were obtained with rectal administration of sodium salicylate and ammonium chloride, with which the erythrocyte sedimentation rate became normal in less than 30 days in 88 per cent of the severest cases. The time required for normalization of the sedimentation rate was prolonged when sodium salicylate was given alone. Permanent valvular lesions remained in 24.1 per cent of the patients. Aortic or mitral valvulitis was present in 34.6 per cent of the cases of rheumatic fever. The metabolic effect of sodium salicylate is of the same order as that of cortisone. The author concludes that rheumatic fever is caused by a hypophysial and suprarenal disorder and that both sodium salicylate and the hormones correct the endocrine disorder and the consequent imbalance of hormones.

Revista Argentina de Reumatología, Buenos Aires

15:22-42 (May) 1950. **Partial Index**

*Citotoxic Antireticular Serum (Bogomolets). G. Costa Bertani.—p. 22.

Citotoxic Antireticular Serum (Bogomolets).—Costa Bertani administered citotoxic antireticular serum (Bogomolets) to eight patients with rheumatoid arthritis and three patients with spinal metastases of cancer of the breast. The serum had a marked and lasting analgesic effect in cancer cases but no effect on the course of the disease. In rheumatoid arthritis the serum had both a pronounced analgesic and a favorable therapeutic effect. Pain and joint involvement were controlled. The general and mental condition of the patients, sleep and appetite improved. Adenopathy and splenomegaly were likewise controlled, and weight and physical activity of the patients were regained. The author believes that the serum acts through a general favorable reaction of the reticuloendothelial system.

Revista Clínica Española, Madrid

37:9-60 (April 15) 1950. **Partial Index**

*General Repercussion Symptoms of Enteritis: Significance and Nature of Sprue. C. Jiménez Díaz and others.—p. 9.

Significance and Nature of Sprue.—Jiménez Díaz and collaborators determined the intestinal absorption of fats in a number of patients with sprue. The intestinal absorption of fat was poor in 80 per cent of the cases and normal in 20 per cent. In a group of cases, sprue coexisted with signs and symptoms of pronounced hypophysial and hypogonadal insufficiency. Three men between the ages of 37 and 51 years were simultaneously observed. Before occurrence of the sprue the patients had normal sexual function. After the development of sprue the patients lost their sexual function and acquired hypogonadal eunochoid characteristics. The authors believe that sprue is a chronic enteropathy of the small intestine leading to alteration of the intestinal flora. The small intestine becomes a focus of bacterial destruction of nutrient substances and of formation of toxic substances. The intestinal bacterial disorder is followed by secondary insufficiency of the hypophysis and of the endocrine system, which is the cause of the multiple symptoms and course of the disease.

Rivista di Neurologia, Bologna

19:449-560 (Sept.-Oct.) 1949. **Partial Index**

*Paralytic-Atrophic Form of Subacute Anterior Poliomyelitis. P. Sarteschi.—p. 449.
Study on Tetany. L. Perria—p. 465.
Gonda's Reflex and Tonic Reflex of Feet in Childhood. G. Bollea and A. Ederli.—p. 542.
Serodiagnosis in Schizophrenia and Confusion. S. Nobile.—p. 560.

Paralytic-Atrophic Form of Subacute Anterior Poliomyelitis.—Sarteschi reports a man, aged 48, with partial paralysis of the upper extremities, which slowly progressed in the course of several months, producing amyotrophy of the hand similar to the muscular atrophy of Aran-Duchenne. The amyotrophy later involved the entire musculature. There were no signs of a pyramidal lesion nor of a disturbance of sensation. Six months after the beginning of the disease, phonation and deglutition showed impairment, which indicated that the process had spread toward the medulla. The clinical picture became suddenly aggravated and terminated in a bulbar paralysis about nine months after the onset of the disease. Postmortem microscopic studies revealed lesions of a chronic type of the cells of the anterior horn with tigrolysis, pyknosis and reduction of cellular elements, enlargement of perivascular spaces and lymphocytic infiltration, small hemorrhagic areas in the gray matter of the anterior horn and glial protoplasmic reaction in the anterior horns. The myelin fibers and the posterior gray horn were intact. The author suggests the existence of a paralytic-atrophic form of subacute anterior poliomyelitis, presenting the clinical and anatomic characteristic of the subacute paralytic type described by Duchenne and of the subacute atrophic form of Alajouanine.

Schweizerische medizinische Wochenschrift, Basel

80:489-512 (May 13) 1950. **Partial Index**

*Addison's Disease Without Increased Pigmentation: So-Called White Addison's Disease. C. Hedinger.—p. 489.
Diphasic Hormone Therapy Combined with Physical Therapy (Diathermy or Salt-Water Sitz-Baths). A. Hauser.—p. 491.
Positive Millon's Test in Adrenal Insufficiency. C. Ferrero.—p. 492.
Hysterosalpingography with Subsequent Hydropertubation. J. Maršálek.—p. 498.

Addison's Disease Without Increased Pigmentation.—Hedinger reports three men and one woman with so-called white Addison's disease. The typical melanosis associated with Addison's disease was absent in these patients. The disease was caused by tuberculosis of the adrenals in all the patients. The tuberculous infection had occurred seven and 17 years ago, respectively, in two of the patients. The duration of the disease and its course do not explain the absence of pigmentation. The individual capacity for the formation of pigment appears to be of great importance. All four patients were fair haired and had light skin. Addison's bronze skin should not be considered as a "pathologic" pigmentation, but as the expression of a fully utilized, maximal, but in itself normal, capacity of the patient for the formation of pigment. Two of the author's patients presented slight brownish discoloration of circumscribed areas of the skin (palms, forearm, anal folds). Slightest changes in the skin and other signs of Addison's disease must be watched for in patients with deficient formation of pigments who are suspected of having Addison's disease.

Semaine des Hôpitaux de Paris

26:1423-1480 (April 26) 1950

*Obesity and the Central Nervous System. Gilbert-Dreyfus, M. Lamotte and J. C. Job.—p. 1423.
Tetany and the Central Nervous System. Gilbert-Dreyfus, H. Mamou and M. Zara.—p. 1429.
Thyroid Hemorrhagic Cysts. Gilbert-Dreyfus and M. Zara.—p. 1433.

Obesity and the Central Nervous System.—According to Gilbert-Dreyfus and co-workers, animal experiments and clinical experience suggest that obesity may result from a disorder of the vegetative nervous centers in the hypothalamus. This concept justifies a new therapeutic attitude, namely, a diet of restricted fluid and chlorides as the basic treatment in cases of obesity in which the central involvement is not evident, i. e., in the great majority of cases. Treatment should be directed toward the nerve centers of the diencephalon in patients in whom the history reveals a preceding encephalitis, or in whom the dietary regimen has proved ineffective. Treatment should consist of irradiation of the hypothalamus. This method proved useful occasionally, but results were inconstant. However, recovery or considerable improvement from irreducible to reducible obesity was obtained in 6 of 20 obese patients who had been subjected to encephalography; pronounced loss of weight resulted from the removal of the cerebrospinal fluid and its replacement by air in obese patients with definite or latent meningoencephalitis. This empiric method has the additional advantage of providing diagnostic aid in patients with latent meningoencephalitis.

Ugeskrift for Laeger, Copenhagen

112:425-466 (March 30) 1950. **Partial Index**

Treatment of Hemangioma with Special Regard to Surgical Indications. A. Bertelsen.—p. 433.
*Dermatogenous Contractures of Upper Extremities. F. Fuchs.—p. 437.
Urinary Incontinence in Women. Goebbel-Stoeckel Operation in 21 Cases. G. Stakemann.—p. 442.
*Treatment of Hypertension in General Practice. N. Svith.—p. 446.
Treatment of Quincke's Edema of Larynx. L. Petersen.—p. 450.

Dermatogenous Contractures of Upper Extremities.—Fuchs reports that in 14 of 54 patients recently subjected to plastic surgery skin transplantation for prophylactic purpose was done immediately or within a month after the trauma, while slight contractures, which had developed in spite of the primary treatment, had to be corrected in 40 cases of fully developed contractures and in two cases of the 14. All variations in degree and extent of burns were represented in this material. Few contractures were due to contusions. Postoperative contractures included five of the shoulder after amputation of the breast with dissection of the axilla. The reconstructive treatment in the cases of contracture was individualized, but the so-called Z-plasty was done either alone or in combination with other treatment in 28 of the 42 cases. Strict evaluation of the results after prophylactic treatment in the 14 cases showed the condition to be ideal in five, improved in three and poor in two. In the patients in whom contractures had developed, results of treatment were ideal in 19, improved in 10 and poor in one; four were still under treatment, 4 had been recently treated and 8 could not be traced. There was recurrence in four cases, but less pronounced than the original contracture.

Treatment of Hypertension in General Practice.—Twenty-one patients treated with low-salt diet were observed by Svith for one to five months. In all cases the blood pressure was reduced from 20 to 75 mm., usually in two to four weeks, with simultaneous improvement in the subjective symptoms. When the diet was neglected a rise recurred, but in only a few cases up to the original height. Considerable lability in the blood pressure in relation to the salt content of the food was noted.

BOOK NOTICES

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Modern Trends in Orthopaedics. Edited by Sir Harry Platt, M.D., M.S., F.R.C.S., Professor of Orthopaedic Surgery, University of Manchester, Manchester. Cloth. $10. Pp. 497, with 222 illustrations. Paul B. Hoeber, Inc. (Medical Book Department of Harper & Brothers), 49 E. 33rd St., New York 16, 1950.

This is an exceptionally timely and well written book. The presentation of material and diction used throughout the book could only be found written by a group of extremely brilliant Englishmen. The format and construction of the book make it quite readable. The scope of the book is rather complete and, with few exceptions, has included, both in the text and particularly in the bibliography, all of the more important and latest references. As a whole, the authors have quoted from numerous other authors, taking into account the most recent experimental and clinical data available. The poorest thing about the book is the reproduction of roentgenograms. There have been recent books from England in which the outstanding thing has been the excellent to superb roentgenogram reproduction. This book falls short on this alone.

To really review a book such as this, one should almost go through it chapter by chapter and point out the excellence of each man's contribution. This would be too much for a review, except to point out what is considered the most essential throughout the book. The introduction by Sir Harry Platt is excellent, and the reviewer agrees with him completely on his outline of both undergraduate teaching of orthopedics and the training for our future orthopedic surgeons. The chapter on fracture treatment is extremely well writtten, particularly the section that deals with the biology of fracture healing. Too many men are prone to consider the technic of fracture treatment without considering the basic physiology of fracture healing.

While it is not this reviewer's wish to criticize such an outstanding man as G. R. Girdlestone, the chapter on tuberculosis of bones and joints seems to stress too much the so-called conservative treatment of tuberculosis. This, however, is the English viewpoint, and due reference is made in this chapter to the fact that many surgeons in America would have performed surgical procedures on these patients earlier. No mention is made of the use of streptomycin as an aid in the treatment of tuberculosis. In the chapter on congenital dislocation of the hip, early diagnosis and abduction position are mentioned, but this could have been stressed a great deal more. The chapter on bone tumors is sound in its description, particularly in the correlation of roentgenographic, clinical and microscopic pictures. The chapter on scoliosis is excellent, and the chapter on paralysis, which deals with both the infantile and cerebral spastic, is well worth reading, particularly for the sane attitude taken in the early treatment of acute poliomyelitis. The chapter on injuries and derangements of the spinal column is well presented. and a good discussion of the intervertebral disk syndrome is given. The chapter on bone dystrophies is outstanding in that this is the most complete and yet brief discussion that has been presented for a long time.

This book has definite merit. It is an excellent reference book and, at the same time, could easily be used as a textbook for medical students, particularly if this book could be correlated with some clinical presentations.

Fertility in Marriage: A Guide for the Childless. By Louis Portnoy, M.D., and Jules Saltman. Cloth. $3. Pp. 250, with 4 illustrations. Farrar, Straus and Company, Inc., 53 E. 34th St., New York 16, 1950.

This book is addressed to the laity, particularly to infertile couples. One of the authors is a physician and a member of the staff of the Sterility Clinic of the Mt. Sinai Hospital, New York, and the other is an editor of magazines, several of them in the field of popular psychology and medicine and written from the layman's point of view. The book contains a great deal of useful information and is presented in a lucid style. However, there are discussions of a few subjects which are distinctly controversial among specialists in sterility; hence they should not be presented to the lay public as more or less universally accepted truths. One of these debatable points concerns temperature charts. Everyone admits that temperature charts are helpful in many instances, but such charts are by no means so consistently reliable that the authors have a right to say the following: "Many physicians . . . place so much reliance on the temperature graphs alone as an index of ovulation, that they now dispense almost entirely with those more difficult efforts to derive the same information. . . . Discovering a lack of signs of ovulation on the charts, these doctors will immediately apply treatment aimed at correcting the situation."

Many obstetricians and gynecologists will take exception to the authors' enthusiasm for the use of hormones, particularly the use of huge doses of estrogenic hormones for the prevention of abortion and the saving of pregnancies in diabetic women and in women with toxemia. It is not correct to suggest that the female sex hormones are generally used by physicians in cases of underdevelopment of the cervix, uterus and breasts and lack of other feminine development. Likewise it is questionable whether it is proper, in a book for the lay public, to discuss roentgen treatment of the pituitary gland and the ovaries to overcome sterility. This is a highly controversial subject which will require many years for its solution. Except for these few criticisms, the book is a distinct contribution and should help childless couples to understand their problem with intelligence. At the end of the book is a list of "Infertility Services in Hospitals and Clinics" and a list of "State Agencies Offering Information on Adoption and Adoption Agencies."

Traité du pneumothorax extra-pleural. Par P. Le Foyer et E. Delbecq. Avec la collaboration de M. Bertheau, et al. Paper. 2500 francs. Pp. 367, with 181 illustrations. Gaston Doin & Cie, 8, Place de l'Odéon, Paris 6e, 1950.

This outstanding and highly important work is based on thirteen years of experience and more than 2,000 personal cases.

A well substantiated definition is given of the physiopathologic principles of "balanced collapse," which the authors prove to be the basis for any satisfactory collapsotherapy and of which they were the first ardent supporters. The indications for extrapleural pneumothorax are presented in considerable detail, and its various problems are considered from every angle. Also included in this chapter are bacteriologic and roentgenologic analyses.

This dissertation will familiarize the thoracic surgeon and the phthisiologist with every phase and every improvement of the technic employed by the authors. The part of the book describing operative methods is well substantiated by numerous anatomic and surgical illustrations, as are the succeeding chapters on after-care and postoperative complications. Included in the section on technic is a thorough presentation of the management and maintenance of extrapleural pneumothorax after the patient is entrusted to the care of the phthisiologist, as well as a discussion on termination of the extrapleural pneumothorax. This is only partly based on the authors' personal observations, owing to a limited number of definitive results, most of their patients being still under treatment.

A short chapter is devoted to various forms of pneumothorax. The results of extrapleural pneumothorax are discussed on the basis of the authors' experience since December 1936, when this operation was first performed by them.

A New Approach to the Treatment of Burns and Scalds. By Leonard Colebrook, F.R.S., F.R.C.O.G. Cloth. Pp. 174, with illustrations. Fine Technical Publications, 39 Wilton Road, London, S.W.1, 1950.

This text stresses the importance of rigid bacteriologic control in the treatment of the burned patient. Mr. Colebrook speaks with authority on the subject, having just completed five years as director of the Medical Research Council Burns Unit at the Birmingham Accident Hospital in England. During this time over 700 burns were treated with over-all mortality of 5 per cent. He estimates that the center handled about 60 per cent of the burns occurring in this industrial city.

The author contends that fresh burns must be painstakingly isolated at the beginning of hospitalization. Newly admitted patients are isolated in individual screened cubicles opening to an outside gallery, each unit having its own equipment to prevent cross contamination by hospital personnel or by air currents. Cultures are made of all burned areas on admission of the patient and are followed with routine cultures at each dressing to check on possible contamination. All dressings are carried out in specially constructed air-conditioned rooms, where the air is changed 20 times per hour and maintained at a temperature of 73 F. An individual instrument, "no-touch" technic is used. Initial treatment of the burned patient consists in minimal débridement followed by application of petrolatum or lanolin ointment containing penicillin. Thick cotton waste dressings are applied, usually overlaid with a thin plaster shell for immobilization.

Data are presented showing a marked increase in airborne pathogens (Pseudomonas aeruginosa, Proteus vulgaris and Streptothrix pyogenes) for 15 minutes following the dressing of a contaminated wound under these carefully controlled conditions. Therefore a 15 minute period must be allowed for clearing of the contaminated air between dressings. A bacteriologist is in constant attendance to make observations and to watch for breaks in technic.

The author recognizes criticisms of the method outlined, such as the high initial cost of establishing such centers and the cost of maintenance. Centralization of burns in one hospital might conceivably increase contamination hazard among potentially infected wounds. Also, students in surrounding institutions might be deprived of the opportunity of seeing burn cases. The author maintains that the increased cost of such installations is justified by the 50 per cent reduction in average hospitalization time of the burned patient. Only 5 per cent of the clean wounds studied at the burns center became contaminated with streptococci, whereas 85 per cent of such wounds became contaminated under treatment in the general hospitals. In such a center, burn cases are centralized for standard treatment and for research purposes. Students from surrounding institutions may be rotated through the center and in a relatively short time gain a comprehensive view of all aspects of the therapy of burns.

It is estimated that a burn treatment center containing 60 beds will serve a population of 750,000. The author recommends multiple erection of burn units at the periphery of large population centers and the training of teams of physicians for one to two year periods, in order that the profession may adequately cope with industrial disasters and even with atomic warfare.

It should be emphasized that control of infection does not solve the problem of the treatment of burns. Such control is an invaluable aid, yet much remains to be learned concerning uderlying pathology in the severely burned patient.

This textbook is a concise, clearly written presentation of the author's data and conclusions, embodied in 174 pages with 17 photographs and 9 figures.

The Vitamins in Medical Practice. By J. Shafar, M.D., M.R.C.P., D.P.H. Cloth. $4.50; 25s. Pp. 383. Staples Press, Ltd., 83 Gt. Titchfield St., London, W.1; 70 E. 45th St., New York 17, 1949.

This volume is an excellent monograph for reference purposes for the medical practitioner who hopes to keep up-to-date in the field of nutrition. It cannot be considered adequate for the investigator in the field of nutrition, despite the fact that it is full of accurate, dependable information and is well documented. In physical form the book is attractively and well printed. It contains no illustrations, which, considering the poor quality of most color photographs in medical texts, is probably not a serious shortcoming. Unquestionably, color photographs of high quality showing clinical nutritional deficiency states contribute immeasurably to the value of any book in this general field.

It is perhaps regrettable in a minor way that the other aspects of nutrition could not also be adequately covered, since mineral, protein, carbohydrate and fat nutrition are so integrated with that of the vitamins that the discussion must necessarily be cut short in places owing to the limited scope of the title. It is appreciated, however, that inclusion of these other fields would have necessitated a far larger and more complex volume.

This book is organized to include a section devoted to the historical background, chemistry and physiologic considerations for each of the known vitamins, followed by a section dealing with the application of this more fundamental knowledge to clinical conditions in various categories, such as conditions of infancy and childhood, pregnancy, oral structures, gastrointestinal tract and hematology. Such a plan of presentation seems admirably suited to the purpose of the volume and provides a well rounded discussion on almost every topic upon which a physician might wish further information.

This reviewer is particularly pleased with the extensive job of 'debunking' performed by the author. There is probably no field of biologic science at the present time so filled with misinformation, uncontrolled clinical observations and unjustified claims than the field of nutrition. The author of this book has pointed out many of these blind spots and provided the available facts to support his statements. The only criticism of the book involves certain small, individual omissions, such as, for example, failure to call attention to the chemical nature of the abnormal urinary pigment in pellagra, which is *not* a porphyrin; failure to point out the relation between the metabolism of tryptophan and nicotinic acid, etc. None of these is serious, and they are mentioned only for the sake of a complete evaluation.

Like nearly all scientific texts, the book is outdated almost before it is off the press. Enormously important developments have taken place in the knowledge of vitamin B_{12} since the manuscript of this book was prepared. The author has compensated for this to a degree by supplying an addendum. None of this is a fault of the book, which can be recommended without reservation as a thoroughly reliable and readable guide to clinical nutrition.

Medical Gynecology. By James C. Janney, M.D., F.A.C.S., Associate Professor of Gynecology, Boston University School of Medicine, Boston. Second edition. Cloth. $6.50. Pp. 454, with 108 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London W.C.2, 1950.

Gynecology has undergone radical change from a surgical to a medical specialty. No longer is it advisable to correct more or less pronounced anatomic deviations from normal in the female pelvic organs without clearcut indications for such operative procedures. A textbook on medical gynecology is therefore necessary equipment for the physician who treats women patients. While the objective of the original work has been maintained, stabilization of penicillin therapy, evaluation of the sulfonamides, standardization of special tests and advance in other methods of treatment have made a second edition desirable. The plan of the book is based on the symptoms and problems for which women seek counsel and advice, and the information presented should facilitate correct diagnosis and proper treatment. The clinical and teaching experience of the author warrants confidence in his published work.

The 61 chapters are short, so that information on the topic is readily obtained. This advantage is further emphasized by the use of condensed tables of the contents of each chapter, reminiscent of the diagram used in analysis of sentence structure. The scope of the work is revealed by the titles of the sections: History and Physical Examination, Patients' Complaints, Physical Findings, Tests and Special Examinations, Gynecologic Treatments, Socio-Medical Problems and Irradiation or Operation.

In the discussion on menstrual disturbances the treatment for menorrhagia consists in stimulation of corpus luteum activity by administration of progesterone or gonadotropins. At the

menopause, however, the author warns that the possibility of cancer must always be eliminated. In the presence of metrorrhagia or bleeding after the menopause, an accurate diagnosis must be made and appropriate treatment initiated promptly. In dysmenorrhea, the former standard treatment of dilation of the cervix and introduction of a stem pessary has been discarded through a better knowledge of the cause. Similarly, control of the condition through systematic exercise has proved disappointing.

The relation of Trichomonas vaginalis to vaginitis has also been subject to change. The possibility of migration of the nonpathogenic intestinal form of this organism into the vagina and the inability of most gynecologists to differentiate between the two types has led to confusion. Furthermore, gynecologists do not agree that the Trichomonas vaginalis is a cause of vaginitis and that the disease runs a chronic course. Janney claims that although reinfections might occur, the symptoms can be controlled with the use of saline, or even tap water, douches, and the introduction of merthiolate® suppositories.

Problems relating to married life are discussed in a manner that makes this section the outstanding feature of the book. The author writes of these intimate questions with the accustomed frank and helpful air of the consulting room. Here, as in other parts of the book, the observations are decidedly practical. Exception might be taken to some measures which are suggested. In endeavoring to explain and solve the different problems which the patient herself presents, the author utilizes an approach which makes this an excellent book for the young physician and general practitioner. Although of special interest to gynecologists, this book should be of easy access to any physician who treats women patients.

The physical makeup of the book leaves nothing to be desired. Paper, type, arrangement of subject matter and binding have combined to make an attractive book. The author is to be congratulated for his writing and for making a valuable contribution to medical literature.

Nursing Care of the Surgical Patient. By John Pettit West, M.D., Attending Surgeon, St. Luke's Hospital, New York; Manelva Wylie Keller, B.S., R.N., and Elizabeth Harmon, B.A., R.N., Instructor in Surgical Nursing, Cornell University-New York Hospital School of Nursing, New York. Formerly, Textbook of Surgical Nursing, 4th ed., by McFee and Keller. Fifth edition. Cloth. $4. Pp. 500, with 70 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1950.

This fifth revision is intended to place emphasis on the nurse's duties in the care of the surgical patient. It aims to give her a basic knowledge of the common surgical conditions combined with an understanding of the principles of diagnostic and therapeutic procedures.

Many of the chapters of this book have been rewritten, the form of the book has been changed, and a number of new illustrations have been included. The section on the operating room has been omitted.

The contents of this book are divided into three units. Unit one deals with introductory material such as injury, repair, infection and tumors. Unit two deals with nursing technics which are encompassed in preoperative and postoperative care. Unit three discusses the various surgical conditions associated with each system of the body. In this unit are included a brief review of anatomy and physiology, a description of common surgical conditions, diagnostic and therapeutic procedures and general considerations of nursing care.

This book does not adequately emphasize the relation between the anatomic and physiologic aspects of the various surgical conditions and the principles of nursing care. The steps in the nursing management of the patient are presented in a manner which amounts to little more than an outline in essay form. In general, that type of discussion which integrates related subjects with a view to promoting intelligent understanding and to stimulating interest in further study is lacking. The attempt of the authors to cover the broad subjects of orthopedic, neurosurgical, urogenital and general surgical nursing within the limitations of a textbook of this size may account for its elementary nature.

You Can Too! By Mary Jane Moore, R.N. Illustrated by Kathleen Hammond. Paper. $2. Pp. 142, with illustrations. The J. J. Tepper Corporation, 30 Rockefeller Plaza, New York 20, 1950.

Written for women by a nurse, with a sense of humor, this book cannot fail to appeal to the patient who is sincere about weight reduction or maintenance. Clever illustrations and picturesque writing add interest to a sensible presentation of principles involved. "Better to waste it than waist it" and "the corset may shift the cargo but it is still aboard" are examples of the kind of writing used to vitalize sound advice. The author points out that what one should weigh is an individual affair and stresses the need for careful medical supervision in reaching this goal. The dangers of an improperly balanced diet are made clear, and no magic formula for weight reduction is advanced. Practical diet adjustments and reasonable amounts of exercise are suggested as positive substitutes for the "special methods" and "sugar-coated pellets" currently being urged on the gullible. While every physician may not agree with all the suggestions made, in general the material is sound. The book deserves careful reading by the physician interested in providing women patients with a helpful guide to supplement his advice on weight reduction.

Surgery for Nurses. By James Moroney, M.B., Ch.B., F.R.C.S., Visiting Consultant Surgeon, Clatterbridge General Hospital, Cheshire. With a Foreword by Dorothy M. Smith, O.B.E., Chairman of the General Nursing Council for England and Wales, London. Cloth. $6. Pp. 644, with 563 illustrations. Williams & Wilkins Company, Mount Royal & Guilford Aves., Baltimore 2, 1950.

The purpose of this book is to assist nurses who are preparing for final state examinations. The material is based on the syllabus of the General Nursing Council. This book includes descriptions of general surgery and the specialties, with a short introduction to obstetrics. Although primarily for students, it is intended to be a reference book for the trained nurse. It contains many illustrations, some of which are in color. The foreword emphasizes the importance of cooperation of doctors and nurses.

The text includes the preoperative and postoperative care of the patient; sterilization and operating room technique; infection and immunity; bacteriology; surgical ward dressings; inflammation, hemorrhage and shock; the specific surgical infections, including wounds, burns and scalds; bed sores; diseases of muscle and tendon; gangrene; surgical tuberculosis; new growths; diseases of the blood vessels, the lymphatic system and the spleen. Various regions of the body are discussed, such as the mouth, face and tongue; the thyroid gland, breast, lungs and thorax; gastrointestinal tract, kidney and ureter; bladder, prostate and the male genital organs, and the central nervous system. Other chapters include the peripheral nerves; fractures; diseases of bones and joints; deformities; diseases of the eye, ear, nose and throat, gynecology and hernias.

There are no outstanding features of text or illustrations. Some of the illustrations are stereotyped and antiquated. Some are of no value, some poor and others worthless. There are many poor photographs and roentgenograms. Interpretation of roentgenograms is out of place in this book, as are detailed operative technic and pathology. MacArthur's operation for hernia is mistakenly called Gallie's.

A short glossary of common surgical terms is included. It is stereotyped and does not include terms of more recent origin. On the whole, this book cannot be recommended as an-up-to-date, simple exposition of the subject for those persons for whom it was written.

Sex Without Fear. By S. A. Lewin, M.D., and John Gilmore, Ph.D. Foreword by Sarah K. Greenberg, M.D. Cloth. $3. Pp. 121, with illustrations. Lear Publishers, Inc., Medical Division, 105 E. 15th St., New York 3, 1950.

In this small volume there is presented a frank, instructive review of the main problems related to sex and intercourse. In addition to clear, well illustrated descriptions of the male and female reproductive systems and the phenomena of fertilization and pregnancy there are chapters on the art of intercourse, sex desire and frigidity (in both of which the average individual is grossly ignorant), sterility and the climacteric, both male and female. A special chapter on how to tell children about sex

offers helpful practical advice and has a bibliography of books that can be consulted profitably by both children and parents. There is extensive consideration of contraceptive practices, with detailed illustrations. The book is attractively prepared, with a total of 46 excellent illustrations, some in color. An additional important feature is a glossary of terms that might be confusing to the average layman. This book can be recommended unreservedly by physicians to those to whom it is dedicated, the married and those about to be.

When Young People Ask About Sex. By Dora Hudson Klemer. Foreword by John A. Ledlie. Paper. 75 cents. Pp. 62, with illustrations. Association Press, 291 Broadway, New York 7, 1950.

Two principal sections comprise this booklet, which seeks to give adequate sex answers to children and youth. In the first section there are four divisions set up for various age groups, the over-all age range being from 6 through 17. In each division are listed questions asked most commonly at those various ages. The total of these varies, but there is a great preponderance of attention to questions for the group of boys and girls 15 through 17, and also much more detailed discussion. At the close of the first section is a brief summary containing helpful reminders on basic attitudes.

Outlines of sex education goals and methods are contained in the second section, which is again broken down into the four different age groups, 6-8, 9-11, 12-14 and 15-17. Here are given in considerable detail goals for parents as well as for children, what should be taught and what methods should be used.

Terms that must be employed in any helpful discussion of sex are contained in a glossary, and a bibliography is provided for parents of young children, for preadolescence, adolescence, premarriage and marriage.

This booklet can be recommended by physicians to parents who feel the need of some self orientation as well as the need of instructing their children properly.

Encyclopedia of Chemical Technology. Edited by Raymond E. Kirk, Head, Department of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn, N. Y., and Donald F. Othmer, Head, Department of Chemical Engineering, Polytechnic Institute of Brooklyn. Assistant Editors: Janet D. Scott and Anthony Standen. Volume I: A to Anthrimides. Volume II: Anthrone to Carbon-Arc. Volume III: Carbon (contd.) to Cinchophen. Volume IV: Cineole to Dextrose. Cloth. $20 per volume. Pp. 982; 915; 955; 969, with illustrations. Interscience Publishers, Inc., 250 Fifth Ave., New York 1, 1947; 1948; 1949; 1949.

Physicians who diagnose and treat "industrial illness" or who act as safety advisers in plants should have access to these volumes, for they are covering the materials, unit processes and industries important in modern American chemical technology. The descriptions of processes and industries are almost as valuable to the industrial physician as the specific statements on health hazards and safety regulations contained in the monographs for individual chemicals or classes of chemicals.

Other physicians will be interested in the material on the manufacture and uses of therapeutic agents, foods and cosmetics. The first four volumes include material on alkaloids by L. J. Sargent and W. H. Hartung, industrial allergens by Louis Schwartz, amebacides by H. H. Anderson and Eder L. Hansen, amino acids by M. S. Dunn, analgesics and antipyretics by A. W. Ruddy, anesthetics and antacids by J. C. Krantz Jr., anthelmintics by J. Allen Scott, antianemia preparations by J. H. Williams, antibiotics by J. S. Kiser and H. B. Woodruff, antiseptics, disinfectants and fungicides by G. F. Reddish, arsenic preparations by H. G. Steinman, ascorbic acid by Peter Regna, barbituric acid and barbiturates by Wilhelm Wenner, bile constituents by W. M. Hoehn, blood fractionation by L. E. Strong, caffeine by R. D. Drinkard and R. H. Walters, carcinogens by J. P. Greenstein, cardiovascular agents by Walter Modell, cathartics by I. W. Grote, chloroform and chlorobutanol by Leonard Stievater Jr., R. J. Van Nostrand and W. F. Ringk, chloramphenicol by H. B. Woodruff, choline by T. H. Jukes and G. H. Schneller, colors for foods, drugs, and cosmetics by Samuel Zuckerman, dental materials by F. H. Freeman, dentifrices by Erwin Di Cyan, and dextrose and starch syrups by G. R. Dean.

In the field of foods and beverages, there are monographs on bakery processes and products, by Oscar Skovholt; beer and brewing, by Erik Krabbe and Henry Goob; carbonated beverages, by W. T. Miller and J. F. Hale; cereals, by W. F. Geddes and F. L. Dunlap; chocolate and cocoa, by W. Tresper Clarke; coffee, by L. W. Elder, and dairy products and by-products, by Arnold H. Johnson. The section on cosmetics, by Florence E. Wall, contains typical formulas. There is a short monograph on deodorization by F. A. Patty.

Diagrams, structural formulas, tables and photographs are used liberally throughout. The bibliographies, which are said to be selective rather than exhaustive, frequently cite patents.

The books should withstand long, hard use: they are printed on heavy coated paper and are sturdily bound. The print is large and well leaded. In the light of the wealth of material and the high quality of the printing, $20 a volume seems a modest price.

Essentials of Gynecology. By Leo Brady, M.D., F.A.C.S., Assistant Professor of Gynecology, Johns Hopkins University, Baltimore, Ethna Louise Kurtz, R.N., and Eileen McLaughlin, B.S., R.N., Instructor and Supervisor, Gynecological Nursing, Johns Hopkins Hospital, Baltimore. Second edition. Cloth. Price, $3. Pp. 256, with 56 illustrations. The Macmillan Company, 60 5th Ave., New York 11, 1949.

The book is essentially what the title implies: a statement of the essentials of gynecology for nurses. In general it is well written and well organized.

The illustrations for the most part are old; many are from the Kelly textbooks illustrated by Max Brödel, whose drawings never have been surpassed. Some are not so good, including the bizarre drawing illustrating gonorrhea in the female, which is misplaced in the section dealing with gonorrhea in children.

The anatomy and physiology chapters are well done. The subject of gonorrheal infection is well handled, and is better than the material on streptococcic infections. The potency of the antibiotics is overstressed. Menstruation and the relation of pituitary and ovarian hormones are simply and clearly discussed. Preoperative and postoperative management could have been a little more inclusive.

Regarding the operating room set-up and instruments, it would seem that the authors believe many more instruments are required for a vaginal hysterectomy than are thought necessary in most well organized clinics. However, this is not a bad fault since some surgeons demand this type of service.

Ectopic pregnancy is well described although colpocentesis is not sufficiently stressed, and culdoscopy is unduly emphasized. The mortality in ectopic pregnancy is nowhere near the figure given. Five hundred cases in Illinois with 9 deaths, one of which was unattended by a physician, gives an over-all rate of less than 2 per cent. In one clinic there were 56 cases without a death.

There is no attempt to show the nurse the details of operative technic, which are so important for her understanding of the cooperative part she is to play in assisting at operations. Carcinoma and fibroids of the uterus are presented fully. Routine examinations and means of early diagnosis should be stressed and the curative value of operation in group I cases pointed out.

In spite of these minor shortcomings the book is a good one and if carefully studied will prove an excellent textbook for the student nurse.

Lehrbuch der inneren Medizin. Von Dr. Ernst Lauda, o.ö. Professor, Vorstand der I. medizinischen Universitätsklinik Wien. Erster Band: Die Krankheiten des Herzens und der Gefässe; die Krankheiten der Atmungsorgane. Cloth. $7.20. Pp. 569, with 98 illustrations. Springer-Verlag, OHG, Mölkerbastei 5, Wien 1, 1949.

This volume, the first of three which are to constitute a textbook of internal medicine, takes up the diseases of the heart, blood vessels and respiratory organs. The author, in his preface, weighs the advantages of multiple authorship against the well known disadvantages, and has decided in favor of single authorship. Assisted by colleagues, whose help is duly acknowledged, and guided by the long tradition of the Viennese school, he has produced a smoothly written, readable, comprehensive and well illustrated book. It is properly objective, fairly definite in therapeutic recommendations, modern in content and well indexed.

Older People and the Church. By Pual B. Maves and J. Lennart Cedarleaf. Cloth. Price, $2.50. Pp. 272. Abingdon-Cokesbury Press, Nashville 2, Tenn.; 150 5th Ave., New York 11, 1949.

The more one thinks about it the more one realizes that there is more than slight justification for the statement made recently by an outstanding clergyman of Columbus, Ohio: "The church is the one institution that serves the individual throughout his lifetime . . . it gives him continuous guidance through all the choices and stages of life." Certainly the church within recent years has shown considerable concern about older citizens. A number of churches—of all denominations and in different kinds of communities—across our land—have addressed themselves seriously to this question and have evolved commendable technics. Not only the technics, but the concern which prompted them, deserve commendation at this time when an increasing proportion of the population consists of older people.

This book, sponsored by the Federal Council of Churches of Christ in America, is further evidence of this concern and of a serious intention on the part of the church to deal with the question, not on the basis of what is expedient, but on the basis of what is right and, therefore, best. It recognizes that resources which meet only the bodily needs of the older people are necessary, even indispensable, but not adequate. Throughout the book the emphasis is on the fact, which is often overlooked, that older people are distinctly persons and not movable digits on someone's statistical table. From a background of pastoral and clinical experience the authors have drawn freely to give the reader an insight into the problems which face older people particularly and the life situations which are most common among them. Methods and procedures are outlined and, indeed, almost spelled out.

The book is a competent piece of work which will repay serious study by all who are concerned about the real and enlarging social problems raised by the fact that the population is rapidly growing older and will shortly be disproportionate in that respect. It is heartening that the church, which by definition is a community wherein barriers of race, color, class and age must have no real significance, is concerned to render an effective ministry, through guidance and fellowship, to those who are on the sunset side of life.

The Alkaloids: Chemistry and Physiology. Volume I. Edited by R. H. F. Manske and H. L. Holmes. Cloth. $10. Pp. 525, with illustrations. Academic Press, Inc., Publishers, 125 E. 23rd St., New York 10, 1950.

This is the first volume of a projected series of five in which the authors propose to compile a comprehensive *Handbuch* of the chemistry and pharmacology of the alkaloids. Volume I discusses the chemistry and occurrence of some of the alkaloids.

The book is composed of seven independent monographs. The first two monographs discuss alkaloids in general, including occurrence, distribution in the plants, separation and purification and their relation to plant metabolism. The remaining five monographs discuss the individual alkaloids. The data for each alkaloid usually include occurrence, isolation, detection, structure, synthesis and chemical variations of the natural alkaloids. The classes of alkaloids discussed are pyrrolidine, senecio, pyridine, tropine, and strychnos nux vomica. The individual alkaloids discussed include the pepper alkaloids, tobacco alkaloids, hyoscyamine, atropine, cocaine, scopolamine and strychnine, to name a few of special interest to the medical profession.

As promised by the compilers, the discussions are comprehensive. Many references are given, through 1948. This volume appears to be an excellent start for a general reference work on alkaloids.

Clinical Interpretation of Laboratory Tests. By Raymond H. Goodale, M.D., Pathologist at the Worcester City Hospital, Worcester, Mass. Cloth. $6.50. Pp. 605, with 107 illustrations. F. A. Davis Company, 1914-16 Cherry St., Philadelphia 3, 1949.

The author describes this book as a valuable reference work on clinical testing for clinicians, students and laboratory technologists. The book is organized as a cross index of laboratory tests by test and by pathology.

Part one treats the physiology, normal values, significance of abnormal values and descriptions of some of the laboratory technics. There is some inconsistency in giving details of technics, varying from complete descriptions to no descriptions.

Part two lists pathologic conditions in the various systems and organs, along with the applicable laboratory tests and interpretations. This section also contains a chapter on the proper methods of collection and preparation of samples for laboratory testing.

There are several excellent histologic illustrations with letter codings of the various components included in the illustration; these codings are not identified in the text. In general, there are no references in the text to the applicable illustrations. The book is of value to medical students and interns for orientation relative to the use and significance of clinical laboratory data. It is lacking in the details and specificity required by the clinician.

Lipidoses: Diseases of the Cellular Lipid Metabolism. By Siegfried J. Thannhauser, M.D., Ph.D., Associate Professor of Medicine, Tufts College Medical School, Boston. Edited by Henry A. Christian, A.M., M.D., LL.D. Second edition. (Reprinted from Oxford Loose-Leaf Medicine with the Same Page Numbers as in That Work.) Cloth. $12. Pp. 214(1)-214(595), with 125 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1950.

The second edition of Thannhauser's book covers extensively the disturbances of the lipid metabolism and brings up to date information on this increasingly important and complex, although in some respects controversial, subject. On the basis of new information supplied during the last decade several changes from the first edition were made in the classification of disease entities and the interpretation of data. Following an adequate presentation of the physiology and chemistry of lipid metabolism, there are discussions of the various types of hyperlipemias, xanthomatoses, lactemias and normocholesteremic xanthomatoses. The last chapters deal with Gaucher's disease, Niemann-Pick disease, infantile amaurotic idiocy and lipochondrodystrophy (gargoylism). The disease pictures are presented in connection with abstracts from numerous case histories. The discussions are in general authoritative, with a few minor exceptions. Chickens are classified with rabbits as herbivorous animals. Most American students of arteriosclerosis would also disagree with the author in his fundamental distinction between atheromatosis and atherosclerosis and in his viewpoints on atherosclerotogenesis. The illustrations are for the most part adequate, but rarely excellent in reproduction; some are definitely below standard (figs. 5, 18, 20 and 81). However, these are minor defects which do not detract from the general excellence of the book as a source of reliable information.

Human Personality and Its Minor Disorders. By William Harrowes, M.D., M.R.C.P.E., D.P.M., Medical Director, New Saughton Hall Hospital, Loanhead, Edinburgh. Cloth. $3.50. Pp. 200. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1949.

This volume is an attempt to formulate manageable and workable concepts of personality from the available objective data for use of those persons professionally engaged with problems of human functioning. The author divides human beings broadly into three groups, based on previous formulations of Dr. Adolph Meyer of Johns Hopkins Hospital. These include persons who, unable to carry the heavy burden of living, are finally forced to seek admission to psychiatric hospitals; those who need psychiatric help while still supporting their life tasks, even though inadequately, and those who can support the pressures of living without help. Emphasis is placed on the human being as an indivisible whole and on the need for establishing psychiatric principles of treatment which are founded on research experiences with so-called normal persons.

It is stated that psychiatry, since the recent war, has tended to occupy a role in which it is rather miscast, in that a movement has arisen which tends to make a neurosis out of every minor worry and perplexity that appears as a natural part of the process of living.

The subject matter in general is treated informally and in language easily understandable by the layman. Various types of neurotic and behavioral disturbances are illustrated in overly brief case reports.

The Diagnosis of Pancreatic Disease. By Louis Bauman, M.D., Assistant Visiting Physician to the Presbyterian Hospital, New York. With a Foreword by Allen O. Whipple, M.D. Cloth. $5. Pp. 74, with 10 illustrations. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1949.

This monograph is essentially a review of the experience of Dr. Bauman with the use of the pancreatic function test utilizing acetyl-beta-methylcholine chloride (mecholyl® chloride) as a secretory stimulant with subsequent study of duodenal contents for volume, p_H and ferment activity. Dr. Bauman has carefully tabulated the results of his studies in normal persons as well as in patients with various forms of pancreatitis, carcinoma of the pancreas and nonpancreatic diseases. He describes in detail the technic used in the tests.

The monograph is concluded with a discussion of the significance of fat absorption studies and serum amylase activity with procedures described for making both fecal fat and serum amylase determinations. This book will serve as a laboratory manual and ready reference source to those concerned with the problem of evaluating pancreatic disease at the functional level.

Avviamento alla patologia genetica dell'uomo. Di Alfonso Giordano, Dottore in medicina e chirurgia e in scienze biologiche, direttore dell'-Istituto di anatomia e istologia patologica della Università di Pavia. Cloth. 2000 lire. Pp. 165, with 87 illustrations. Aldo Garzanti Editore S.p.A., 30 Via Della Spiga, Milan, 1949.

Giordano has divided his book on the development of the pathologic genetics of man into three parts. In the first part he cleverly embodies (1) diagnosis and prognosis, (2) the principles of genetics and (3) the applicability of the mendelian law. He particularly dwells on the factors of heredity, dominant and recessive, and on the diseases of man with their inherent pathologic and morphologic characteristics as related to sex.

The second part of the book is devoted to studies of the mesenchymopathies of osteocartilaginous tissue, mesenchymopathies of angiohemopoietic organs and hereditary generalities. The third and final part offers a brief account of hereditary diseases involving the pyramidal and the extrapyramidal tract of man. Some of the diseases which, in his opinion, are tinged with hereditary transmissibility are: any atrophic lateral sclerosis, Huntington's chorea, Wilson's disease with its hepatomegaly and splenomegalic phenomenon and the pseudosclerosis of Westphal-Strümpell disease.

The book is well illustrated. There are many helpful tables, photographs of rare specimens, roentgenograms and microphotographic slides. For one interested in heredity, this unusual presentation will prove an invaluable addition to a collection of cherished books.

Klinische Pathologie der Blutkrankheiten. Von Prof. Dr. Rudolf Schoen, Direktor der Medizinischen Universitätsklinik zu Göttingen. und Prof. Dr. Walter Tischendorf, Oberarzt der Medizinischen Universitätsklinik zu Göttingen. Cloth. 57 marks. Pp. 521, with 101 illustrations. Georg Thieme Verlag, Diemershaldenstrasse 47, (14a) Stuttgart-O, 1950.

This book has an orderly arrangement with well chosen divisions into chapters and subchapters. It is written in a cumbersome style, however, with involved sentences and lengthy chapter headings. This makes reading difficult. The illustrations are of good quality but there are not enough; marrow changes, particularly, are poorly illustrated. The sections on therapy are complete and up-to-date. References are numerous and indicate a careful survey of the literature. Author and subject indexes are separate and adequate. This volume has a completeness that will be attractive to students of hematology, particularly those who like the German textbook style.

Liver Injury: Transactions of the Eighth Conference April 28 and 29, 1949, New York, New York. Edited by F. W. Hoffbauer, M.D. Paper. $1.60. Pp. 164, with 44 illustrations. Josiah Macy, Jr. Foundation, 565 Park Ave., New York 21, 1950.

This report of the Eighth Liver Injury Conference consists of seven papers on various aspects of liver disease which were read to a small group of participating members. After each paper there is excellent discussion by the other participants, all eminent men in this field. The subjects include: The Liver Lobule, by Melvin H. Knisely; The Function of the Hepatic Artery, by J. Markowitz; Massive Liver Necrosis, by Paul Gyorgy and Klaus Schwartz; Recent Findings Concerning the Role of the Liver and Kidney, and Circulatory Homeostasis, by Ephraim Schorr; Metabolic Behavior of the Eviscerate Rat, by Dwight J. Ingle; Liver Glycogen and the Protection of Liver Cells, by J. L. Bollman, and Locus of the Beginning of Dietary Cirrhosis, by W. Stanley Hartroft.

The presentation is informal but on a high scientific level. The participants represent most of the leading investigators in this field. This book should be read by all those interested in liver disease.

L'alcoolisme: Problèmes médico-sociaux, problèmes économiques. Par Paul Perrin, professeur à l'Ecole de médecine de Nantes. Second edition of "Croisade médicale contre l'alcoolisme," ouvrage couronné par l'Académie des sciences (Prix Bréant 1947). Petite encyclopédie de l'alcoolisme à l'usage des médecins, des éducateurs et des dirigeants. Paper. 1300 francs. Pp. 420. L'Expansion scientifique française, 23 rue du Cherche Midi, Paris 6e, 1950.

This volume presents a comprehensive analysis of the causes and consequences of excessive consumption of alcoholic beverages and an extensive account of what doctors, hospitals and the courts in France are trying to do in the way of prevention and control. Even the informed American reader will be surprised and may question the accuracy of the statistics on alcohol consumptions in eight European countries (page 2), figured as absolute alcohol in liters per person per year: France, 27; Italy, 11; Belgium, 9; Great Britain, 4,; Germany, 4; Sweden, 3; Norway, 1, and Finland, 0.1. The hundreds of thousands of tourists visiting France may be a factor in this extraordinary alcohol consumption in that country. This book presents valuable facts and problems for the physician, the biologist and the sociologist with command of the French language.

Experimental Anaphylactic Iridocyclitis. By Bjørn Foss, Assistant Physician at the University Eye Clinic, Oslo. Acta pathologica et microbiologica scandinavica, supplementum LXXXI. Paper. Pp. 128, with 30 illustrations. Ejnar Munksgaard Forlag, Nørregade 6, Copenhagen, 1949.

Experiments on the production of iridocyclitis in albinotic rabbits by the injection of foreign serum and egg albumin are described in detail, and interesting and provocative conclusions are drawn. Injection of a small quantity (0.1 cc.) of these substances into the vitreous of healthy rabbits produced a reaction which the author designates as primary anaphylactic iridocyclitis. Subsequent intravenous or subcutaneous injections of the homologous antigen will result in a secondary anaphylactic iridocyclitis. Many ramifications of the subject have been investigated in a thorough manner, including what the author terms "sympathetic anaphylactic iridocyclitis," in which it is shown that an antigen present in one eye affects the uveal cells in the opposite eye.

In view of contemporary theories concerning the cause of iridocyclitis in the human, the experiments described are of considerable interest and may point to a better understanding of the pathogenesis of inflammatory diseases of the uveal tract. The report is of interest primarily to the ophthalmologist or allergist who is concerned with a laboratory demonstration which may eventually have a most practical clinical application.

Coronary Circulation in Health and Disease. By Donald E. Gregg, M.S., Ph.D., M.D., Chief Research Physician, Medical Department, Field Research Laboratory, Fort Knox, Kentucky. Cloth. $4.50. Pp. 227, with 73 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1950.

This monograph by a great authority gives a comprehensive review of the experimental approaches to, and present status of, the coronary circulation in health and disease. The problem is discussed in terms of its public health importance, anatomic background, experimental methods, factors influencing coronary flow, and the coronary circulation in heart disease. This is an excellent and critical review of a complex and difficult subject. The author not only discusses the present status of research in this field, but also indicates fruitful areas for further investigation. The book is well written and illustrated. Each of the eight chapters is followed by a comprehensive bibliography. The book is recommended for medical students, cardiologists and those engaged in research in this field. It is too technical for the general practitioner.

QUERIES AND MINOR NOTES

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SHOULD TUBERCULOUS PATIENTS SMOKE?

To the Editor:—I have about 40 male patients with tuberculosis. Many of them are dissatisfied with the "no smoking" rule which I have made. What is the present thought regarding smoking by tuberculous patients? Is there any available educational material on this subject for presentation to patients either in the form of a movie or by some other method?

D. W. Tripodi, M.D., Providence, R. I.

ANSWER.—One of the first principles to be learned in the treatment of tuberculosis is that the patient should rest and have good food and fresh air. Tobacco smoke is anything but fresh air. It consists of small particles of carbon and water vapor laden with oils, resins and nicotine from the tobacco. All are relatively harmless in small quantities, but many things may be relatively harmless to normal persons in small doses that are a decided handicap to persons with disease.

The possible harm done is dependent on two factors, the individual variations in the patient's reaction to tobacco and the acuity of the disease process. Individual variation is something that patients cannot comprehend, but it is a fact that some persons may smoke without much reaction while others may be greatly affected. Among other things, tobacco smoke causes hyperemia of the mucosa. To do this it must act as an irritant, which is undesirable in the treatment of any active disease of the lungs. Certain bronchoscopists claim that they can tell whether a person is a one, two or three-package cigaret smoker by the degree of hyperemia. The irritation also frequently causes excessive coughing, which is a form of exercise and definitely contraindicated.

The effect of nicotine on the nerve ganglions is another detrimental effect. It causes excessive stimulation which is temporarily pleasing, but the reaction is sometimes too severe. It is like taking too much exercise. Perhaps a worse result is that cigaret smoking reduces the appetite and therefore the food intake. One of the big problems in acute tuberculosis is to keep up the weight of the patient. A high food intake is imperative. Another possible harmful effect is that of increasing the incidence of cancer. Of course, this applies to all cigaret smokers, as well as those with tuberculosis.

Apart from the possible detrimental effects of the tobacco is the acuteness of the disease. A febrile patient with acute tuberculosis should not smoke any more than he should be allowed to get up and take exercise. Both are bad and are not permissible. Just when a patient may be permitted to smoke is a problem. Who can say when the danger of spread or exacerbation of disease is past? A good rule is not to take a chance until the tuberculosis is well arrested. Smoking adds one more handicap to the many others that must be controlled if the patient is to recover.

Smoking is a problem in a veterans' hospital, where all sorts of societies bring in cigarets by the carton and encourage smoking. In most patients smoking is not harmful, but it *is* for patients with acute pulmonary disease. Yet it poses a serious problem to administration when some patients are given smokes and others are not. The solution is probably one of education of the individual patient by the floor doctor. It must be an appeal to reason.

RUPTURED SPLEEN

To the Editor:—A child aged 5 years had a ruptured spleen which has healed spontaneously. Is there any danger of later sequelae or complications? Would one be safe in assuming that with apparently sound healing and with no remaining tumor mass palpable, with no anemia, pain or tenderness left as a residual, there would not be any later developments?

Lionel L. Davis, M.D., Mount Pleasant, Mich.

ANSWER.—Yes. The major complications of a ruptured spleen are immediate shock and fatal hemorrhage and thrombosis of the splenic vein. Danger from these seems to have passed, although the date of the rupture was not given. Unless there was primary chronic splenic disease, in which case the spleen would probably still be enlarged, further trouble is not to be anticipated.

INJECTION OF WHOLE BLOOD INTO INFANTS

To the Editor:—Can 2 to 5 cc. of whole blood safely be taken from a parent—or nonparent if necessary—and immediately be injected intramuscularly into a child for "hemoimmunization," without regard to Rh factor, blood type or cross matching? Could this also safely be done from one adult to another without regard to blood type? Proper precaution is taken to keep from entering a vein of the recipient, although it is conceivable that some blood may directly be absorbed into the venous channels in small amounts from such a practice. I have been doing this for some years in treating atopic eczema of infancy and childhood and feel that it has been of definite benefit. A colleague of mine recently stated that this is a dangerous practice and may result in severe reactions. Please list any references you may have about hemoimmunization (not autohemoimmunization, which is beneficial only psychologically, in my experience).

M.D., Ohio.

ANSWER.—The intramuscular injection of blood into a child for "hemoimmunization" or any other purpose without paying attention to the Rh factor, blood type or cross matching is to be condemned because of the danger of isosensitization. If the child is Rh negative, and the blood used for injection is Rh positive, this may cause the child to become sensitized to the Rh factor. If the child thus sensitized is a girl, who subsequently marries an Rh-positive man, her first born baby if Rh positive would be erythroblastotic and might even be stillborn if the antibody titer is high enough. If the husband is homozygous Rh positive, there would be no chance for such a couple to have a normal baby. Dr. Philip Levine has observed three such cases resulting from intramuscular injections of blood given to prevent measles and three cases in which blood was given to prevent poliomyelitis, and similar cases have been observed by Dr. A. S. Wiener and others. Intramuscular injection of blood may also be responsible for hemolytic transfusion reactions by bringing about isosensitization in individuals who subsequently require blood transfusions. This danger is not so great now that routine Rh tests and cross matching tests by the conglutinating technic are done before blood transfusions. However, in rare cases such injections could also bring about isosensitization in Rh-positive individuals, and in that way complicate the selection of donors should transfusion ever be required.

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BERMUDA GRASS ALLERGY

To the Editor:—The difficulties of handling cases of Bermuda grass allergy in the Tucson area prompts this request for information. In the relocation of these persons the fact that Bermuda grass is grown to some extent as far north as San Francisco and New Jersey brings complications. I would like to know how much of a problem allergy to Bermuda grass is in San Francisco, also Portland and Seattle. It would also be appreciated if you could give me a source of detailed information concerning this problem on a nationwide basis.

C. A. Janda, M.D., Tucson, Ariz.

ANSWER.—While A. S. Hitchcock ("Manual of the Grasses of the United States," Washington, D. C., U. S. Government Printing Office, 1935, pp. 483, 484) includes New Hampshire, New York, New Jersey, Pennsylvania, Michigan, Iowa and Oregon in his map on "Distribution of *Cynodon dactylon*," it is evident from allergy literature that Bermuda grass is not a source of appreciable amounts of wind-borne pollen in any of these states. Indeed, it is practically impossible to find specimens of the plant in these states. W. C. Deamer and H. E. McMinn (*J. Allergy* **6**:480 [July] 1935) report that "this grass occurs very sparingly and sheds very little pollen in the cooler climate of San Francisco." A. H. Rowe (*California & West. Med.* **30**:173 [March] 1929), in his survey of the city of San

Francisco, regards Bermuda grass as "rare" or "scarce." C. T. Chamberlain (*Ann. Otol., Rhin. & Laryng.* **36**:1083 [December] 1927), in his "Observations on the Treatment of Hay Fever in the Pacific Northwest," does not mention Bermuda grass among the common hay fever plants of western Oregon. R. F. E. Stier, G. Hollister and T. A. Bonser (*J. Allergy* **1**:260 [March] 1930) list 30 species of grasses active in allergy in the Pacific Northwest (Washington, Oregon, Idaho, Montana, Wyoming, Utah and Colorado) and do not mention Bermuda grass. E. F. Deppe (*Northwest Med.* **47**:439 [June] 1948), in discussing the hay fever pollens of the Seattle area, emphasizes eight major causes of grass hay fever but does not include Bermuda grass. J. E. Stroh (*Ann. Allergy* **5**:337 [July-August] 1947), writing from Seattle, in discussing Northwest Pollens says, "Bermuda and Johnson grasses do not grow in the Northwest."

R. P. Wodehouse ("Hayfever Plants," Chronica Botanica Co., Waltham, Mass., 1945, pp. 171, 173, 175) says of the Middle Atlantic states (Delaware, Maryland and District of Columbia), "Bermuda grass and other southern species are reported to occur in this region but they appear to be of little consequence." His comment on the situation in the Virginias and the Carolinas is that "Bermuda grass is important principally in the southern part of the region and is abundant in Charleston." For the North Central states (Ohio, Kentucky, Indiana, Michigan, Illinois, Iowa, eastern Missouri, Wisconsin and southern Ontario), "Bermuda grass and spiny amaranth, two important hay fever plants of southern regions, occur in extreme southern parts but are scarcely ever abundant enough to be very important." The above findings and opinions are entirely in line with the writer's observations in these areas.

The questioner seems to assume that Bermuda grass sensitiveness is specific and that, once out of the Bermuda grass area, his patients will be free from symptoms caused by grass pollens. The assumption would seem to be unwarranted. While there may be an occasional case of specific Bermuda grass sensitiveness, the chances are great that the patients will prove to be clinically sensitive to the northern grass pollens. Any advice about change of residence should be preceded with skin tests for bluegrass, timothy, orchard grass, redtop, Canada bluegrass and velvet grass. Regardless of whether there is a reaction on skin test a cautious trial of Bermuda-free areas would be advisable before relocation.

SWELLING OF THE PENIS

To the Editor:—**What would be the causative factors in isolated swelling of the shaft of the penis with no concomitant swelling of either the glans, scrotum or lower extremities? This patient, a man aged 35, has had a ligation of the saphenous vein on the right side and has some mild varicosities on the left side. There is no history of venereal diseases; there are no urinary symptoms; results of blood tests for filaria have been persistently negative, and observations in a complete urologic investigation are entirely normal. This edema of the penis has persisted in spite of rest, elevation, heat in the form of hot packs and diathermy. Can you give any information as to the etiology and the treatment?**

Murray Russell, M.D., Hermosa Beach, Calif.

Answer.—Edema of the penis may result from (1) venous occlusion (thrombosis, ligation), (2) lymphatic obstruction (neoplasm, Hodgkin's sarcoma, tuberculosis, lymphogranuloma venereum, lymphangitis, primary lymphedema), (3) trauma or (4) in the course of a systemic illness such as nephrosis, cardiac decompensation, hypoproteinemia or angioneurotic edema.

From the information submitted it seems that there is no systemic illness present and that trauma has been excluded as a causative factor. The absence of palpable enlarged superficial inguinal lymph nodes should allow exclusion of lymphatic obstruction as a cause of the penile edema inasmuch as the skin of the penile shaft drains through these nodes. From them the lymph flow drains into the deep inguinal nodes and thence into the external iliac lymph nodes. If the deep lymphatic systems (inguinal and iliac) were involved, edema should also involve the scrotum and glans penis. Recurrent lymphangitis of the penis may be excluded by the history and by the fact that filariasis has not been detected by appropriate tests. Primary lymphedema of the penis remains as a distinct and likely possibility, and its characteristics usually readily permit diagnosis.

Occlusion of the dorsal vein of the penis may cause transient edema, which ordinarily subsides along with the thrombophlebitis causing the occlusion. When both the dorsal vein of the penis and the external pudendal vein are occluded, persistent edema of the penis may occur. Usually, however, scrotal edema also occurs. In such instances, there is no way to be certain that extensive thrombosis has not also involved the internal pudendal system.

There are no statements to support a diagnosis of edema secondary to trauma or a generalized illness. If there has been no lymphangitis of the penis and if there are no enlarged superficial inguinal lymph nodes, it is very likely that the penile edema is due to lymphatic obstruction. It is not unlikely, however, that edema may be caused by a primary lymphedema similar in characteristics to what is called lymphedema precox when it affects the limbs.

The only positive information suggesting venous occlusion is that of a previous saphenous vein ligation (presumably the greater saphenous vein). If the penile edema had its onset shortly after this procedure, one might question whether the edema is the result of occlusion of the external pudendal vein on the side of the ligation. This must be exceedingly rare in view of the large number of vein ligations without this complication. It is unlikely that penile edema can result from occlusion of this vein alone. Ligation of the external pudendal vein followed by occlusion of the dorsal vein of the penis by thrombosis might result in persistent penile edema without scrotal edema. Determination of the venous pressure in the dorsal vein of the penis might be helpful in establishing a diagnosis. An elevated venous pressure would favor venous occlusion as a causative factor, while a normal venous pressure would exclude this and strongly favor primary lymphedema as the basis for edema.

Treatment of this patient will depend upon establishment of a correct diagnosis. If venous occlusion is the cause of edema collateral venous circulation may develop over a period of months. If primary lymphedema is present, a plastic surgical repair may be considered.

TREATMENT OF WARTS

To the Editor:—**A restaurant counterman, aged 27, consulted me regarding the treatment of verrucae which have appeared in crops on his hands for the past six months. Several of the warts have been cauterized, but others soon appear. What is the best form of treatment for this condition?**

M.D., New York.

Answer.—Warts sometimes disappear after the most simple of remedies, such as soaking them with castor oil, for example, and then they sometimes prove resistant to all remedies. The list of suggested treatments is large and includes the following: the careful application to the warts of proper concentrations of acids, such as salicylic, glacial acetic, or trichloroacetic acid or chromium trioxide; the application to the warts of solid carbon dioxide, liquid oxygen or liquid nitrogen; destruction by electrodesiccation, electrocautery or electrolysis; radiation with radium or roentgen rays; the injection of bismuth compounds intramuscularly or directly under the warts; the administration of mercury protoiodide; psychotherapy in the form of suggestion; painting the warts with the resin of podophyllum, and, most recently, the administration of aureomycin. The simplest and perhaps most effective procedure in this case would be to destroy the lesions with electrosurgery—but not so deeply as to leave disfiguring scars—and then to apply an antiseptic ointment frequently until the areas are healed. Should this fail, then radiation therapy should be used with caution

DUPUYTREN'S CONTRACTURE

To the Editor:—**I wish to take exception to the statement under "Dupuytren's Contracture," *The Journal*, page 695, June 17, 1950. The third sentence reads: "Irradiation treatment is without permanent effect except to cause damage to the hand." I have had a Dupuytren's contracture, and radiation therapy was administered about seven years ago. I have been cured completely. Furthermore, as a radiologist I have treated a number of selected patients, and, while I have not been able to contact all the patients for follow-up, excellent results have been obtained at least in some. I feel that the last part of the sentence quoted is contrary to fact.**

Wybren Hiemstra, M.D., Los Angeles.

The above comment was referred to the consultant who answered the query to which reference is made. His reply follows.—Ed.

Answer.—It may be true that irradiation treatment causes a temporary recession of Dupuytren's contracture, but it does not cure the underlying condition. Irradiation treatment to a hand is a double-edged sword. It may, and all too often does, even in the hands of experts, cause irreversible damage to this delicate organ by lowering the vitality of the tissues, thus rendering it unfit for surgery, which is usually eventually necessary. Too many hands are damaged by irradiation to permit sanction of this form of treatment.